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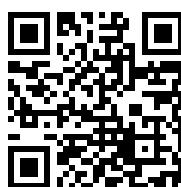
MAY, 1916

A MONTHLY MAGAZINE
PUBLISHED BY THE
**CHICAGO PNEUMATIC
TOOL CO.** NEW YORK
CHICAGO

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 June 27-30, 1916—American Institute of Electrical Engineers, at Cleveland, Ohio.
 July 9-13, 1916—World's Salesmanship Congress, at Detroit.
 August 15, 1916—International Railroad Master Blacksmiths' Association, at Hotel Sherman, Chicago.
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 Sept. 5, 1916—The Railway Equipment Manufacturers, at Hotel Sherman, Chicago.
 Sept. 5-6-7-8, 1916—The Traveling Engineers' Association, at Hotel Sherman, Chicago.
 Sept. 11, 1916—International Union of Steam and Operating Engineers, at Newark, N. J.
 Sept. 11-16, 1916—American Foundrymen's Association, at Hotel Statler, Cleveland, Ohio.
 Sept. 11-16, 1916—The American Institute of Metals, at Hotel Statler, Cleveland, Ohio.
 Sept. 11-16, 1916—American Institute of Mining, at Hotel Statler, Cleveland, Ohio.
 Sept. 11-16, 1916—National Association of Stationary Engineers, at Minneapolis, Minn.
 Sept. 12-14, 1916—Master Car & Locomotive Painters' Association, at Atlantic City, N. J.
 Sept. 12-13-14, 1916—Railway Signal Association, at Grand Hotel, Mackinac Island, Mich.
 Sept. 19-22, 1916—Roadmasters' and Maintenance of Way Association, at Hotel McAlpin, New York City.
 Oct. 9-13, 1916—American Electric Railway Association, at Atlantic City, N. J.
 Oct. 17-19, 1916—American Railway Bridge and Building Association, at New Orleans, La.
 Oct. 17-18-19, 1916—Maintenance of Way Master Painters' Association of United States and Canada, at Philadelphia.
 Feb. 5, 1917—American Road Builders' Association, at Boston, Mass.

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"Buttin' In."

Look out there, friend, keep in your chin;
Keep guard on that besetting sin
Of always, always buttin' in

The other man's affair.

This buttin' in is like a hike,
For instance on a motor bike,
A hidden snag you'll sometimes strike
You little thought was there.

Then when you wake up on your back,
Spokes in your wheel all hanging slack,
You realize that you're a Jack

That should have used more care.

Just as you think you are "IT" all,
Some gink at you will take a fall,
And ten to one he'll make you crawl

And fight your battle square.

—Contributed by J. O. Williams, Gulfport, Miss.



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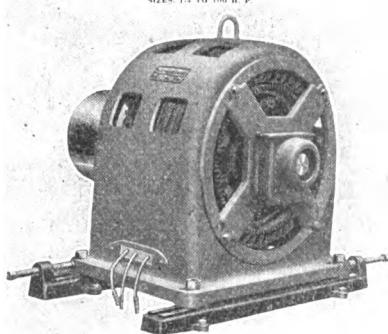
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BULLETIN 114

JULY, 1914

POLYPHASE INDUCTION MOTORS

SIZES 1/4 TO 100 H. P.



This Bulletin

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BURKE ELECTRIC COMPANY

ERIE,
PA.

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IDEAL POWER

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VOL. XII

MAY, 1916

No. 1

SIMPLATE vs. FEATHER VALVES

Results of a Test Recently Made at the Franklin, Pa. Works of the
Chicago Pneumatic Tool Co.

A set of the "Feather" Valves was placed in the cylinders of a "Chicago Pneumatic" Cross Compound Compressor, and a test was run, indicator cards being taken together with such other observations and power measurements as were necessary. The "Feather" Valves were then removed and a set of "Simplate" Valves was applied to the same cylinders, following which the compressor was operated at the same speed and under the same conditions, similar readings and measurements being taken.

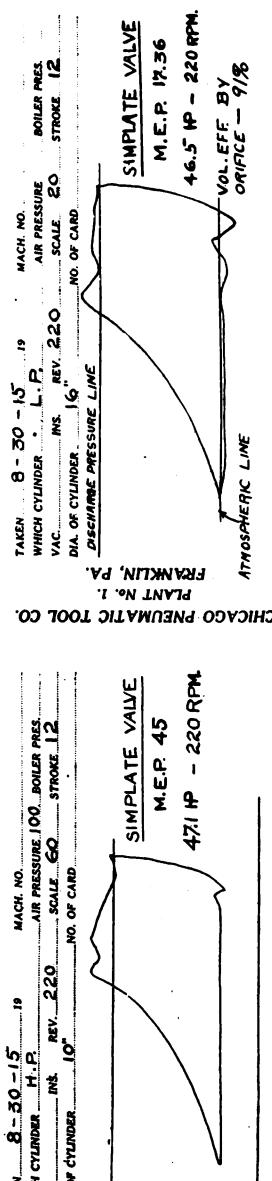
After this the "Simplate" Valves were removed from one end of each of the cylinders and replaced with the "Feather" Valves, resulting in "Feather" Valves at one end of the cylinders and "Simplate" Valves at the opposite ends of the same cylinders. Under this condition, indicator cards were taken as well as various other tests and readings, and in every instance the same result as to the relative merits of the "Simplate" and "Feather" Valves were obtained.

The accompanying illustrations are reproductions of the actual cards taken during these tests. Under Figure (1) are cards from the high and low pressure cylinders with the "Simplate" Valves. Under Figure (2) are cards from the high and low pressure cylinders with the "Feather" Valves. Under

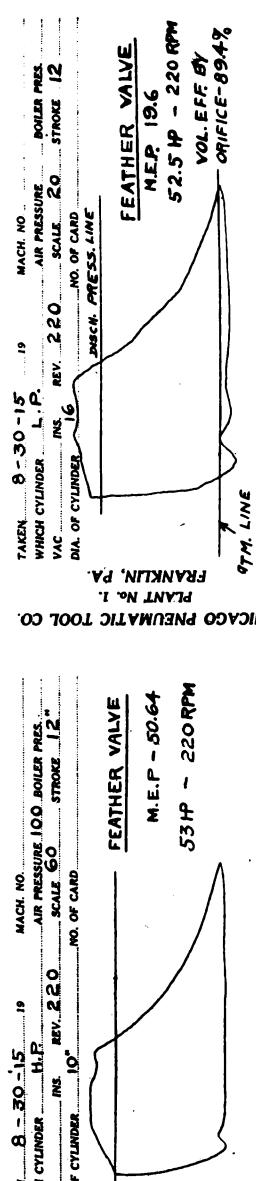
Figure (3) are cards from the high and low pressure cylinders equipped with "Feather" Valves, but with the ends of the "Feathers," or strips, cut off $\frac{1}{8}$ " in order to bring about the condition that would exist after one or two months of service when the ends of these strips wear off, as they have been found to do.

The relative performance of these valves is plainly shown on the indicator cards by a comparison of the difference in the (M. E. P.) Mean Effective Pressure, (H. P.) Horse Power, and Volumetric Efficiency. For example, the combined horse power on the two high and low pressure cards under Figure (1) equals 93.6, while the combined horse power under Figure (2) equals 105.5, or 11.9 less horse power required when using the "Simplate" than when using the "Feather" Valve, a saving of 11.28%, or approximately one-ninth less power, despite the fact that the "Simplate" valve volumetric efficiency, as shown on these particular cards, is 1.6% higher, which when added to the 11.28% would bring the saving for actual air delivery up to 12.88% if "Simplate" valves were used.

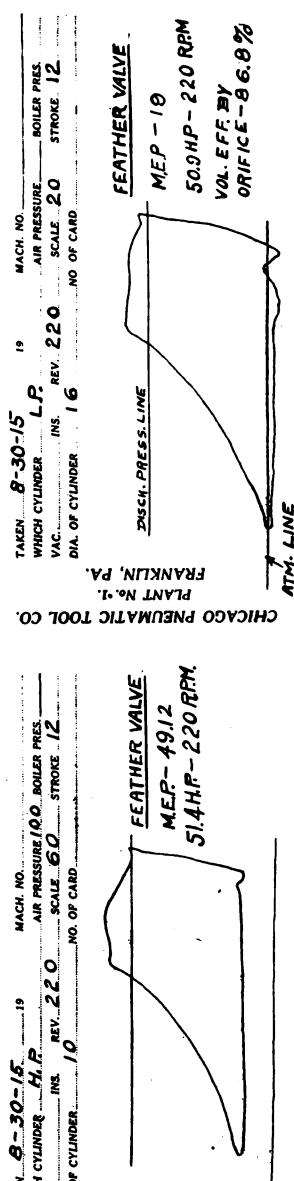
Under Figure No. (3), as before stated, the ends of the "Feathers" were cut off $\frac{1}{8}$ ", equalling $1/16$ " wear off each end. Under this condition, as the cards plainly show, the valve does not seat proper-



1



2



3

ly. This is evidenced by the hook on the end of the card, and it also accounts for the reduction of the volumetric efficiency. As will be noted the efficiency here falls to 86.8%, or 4.2% below that of the "Simplate" Valves.

Another way to compare the relative merits of these two valves would be to assume that \$0.01½ a K. W. is paid for power, and that the compressor is operating ten hours a day and three hundred days in the year. Then with this saving of 12.88% for actual air delivered, about \$502.00 per year more for power would be paid to operate the same compressor when equipped with the "Feather" Valve over the cost of power when using the "Simplate" Valve.

Some publicity has been given a 40,000,000 revolution test of the "Feather" Valve. This is not significant when reduced to months of operation. These 40,000,000 revolutions were made in less than four months time. The compressor, it may be agreed, was operating at a rather high speed, but if it is assumed that the speed was cut in half—then the operation period would be less than eight months, and if the "Feather" Valve will wear off $\frac{1}{4}$ " in eight months' service, the volumetric efficiency will fall considerably below that shown when it is worn off $\frac{1}{16}$ " on each end, or $\frac{1}{8}$ " altogether.

Summarizing the points of superiority of the "Simplate" Valve over the "Feather" Valve, it is found that:

When these valves are placed in the same machine a saving of 11.28% in power cost of operation is effected.

A volumetric efficiency is secured at the same time of 1.6% over that of the "Feather" Valves when new and in perfect working order.

A reduction of 4.2% in volumetric efficiency results when the "Feather" Valves have worn $\frac{1}{16}$ " off the ends of the strips, and this wear at the ends of the strips is a real condition that is experienced in service, as the valve that made the 40,000,000 revolutions was worn $\frac{1}{4}$ " shorter in length than when first placed in operation.

The reason that there is a falling off

in volumetric efficiency when the "Feather" Valves shorten in length is that the valve does not close promptly enough, for, when this valve becomes the least bit shorter than full length, it has to depend on gravity to close it, which process is too slow when the compressor is operating at high speed; hence the reduction in volumetric efficiency, and the showing that is made on the cards as reproduced under Figure (3).

Referring to the details of these cards, the straight line drawn on the top of the card indicates the discharge pressure and when a comparison is made of the amount of work done above this line with the "Simplate" and with the "Feather" Valves, it will be easily seen why more power is required to operate the compressor when equipped with "Feather" Valves. The difference in the drawing down of the inlet line below the atmosphere should also be carefully noted. This explains the reason for some of the excess power required to operate the compressor with "Feather" Valves.

A further and serious objection to the "Feather" Valve, in addition to the inevitable wear at the ends of the strips, is the constant bending to which these strips are subjected, of approximately 250 times per minute, or as many times as the compressor makes revolutions. By considering the number of times these strips undergo this bending process in a day and multiplying the total by the number of days in a month and months in a year, it will be realized that no metal can withstand such service.

Time to Houseclean.

"Ah see yo' is house cleanin'," said Mrs. Snow White.

"Yes," replied Mrs. Marsh Green, "dey is nothin' lak movin' things round once in awhile. Why, I des come ercross a pair ob slippers under de bed dat Ah hadn't seen fo' five yeahs."

Naturally.

"Where have you been?" "To the cemetery." "Any one dead?" "Sure. Every one of them."

Comparing Oil Engines with Steam Engines with Particular Reference to Refrigerating Plants.

During the past ten years internal combustion engines have been so perfected in design and construction that they now successfully compete with steam engines in all classes of work. Their reliability is such that ocean-going steamships are built with single units and submarines equipped with only high speed oil engines undertake cruises of 4,000 miles, says Louis K. Doelling in *Ice and Refrigeration*.

The Internal combustion engine has been introduced on a larger scale in refrigerating plants only in the last three years. The reason is probably due to the fact that in the past nearly every plant that required refrigeration also needed steam. Packing houses and breweries required great quantities of heat and, until a few years ago, the majority of ice plants depended entirely on distilled water. The necessity of having a steam boiler, and the fact that by using exhaust steam power was available as a by-product, made the steam engine the proper prime mover. Another factor which retarded the introduction of the oil engine was the high initial cost. The price of high grade oil engines has been higher than that of steam plants with Corliss engines and low first cost is the main consideration for many refrigerating plants. Conditions have changed. Steam for heating purposes is now used more economically. The raw water ice plant has been perfected. Oil engines are being built better, cheaper and of higher economy. The cost of coal is rising, whereas oil is cheaper than it has ever been before.

A short comparison will show the superiority of the oil engine over the steam engine. An oil engine of an improved type develops under normal conditions one brake horsepower hour with 0.45 pounds of oil, which at 19,000 British thermal units per pound equals 8,500 British thermal units. This represents a brake horsepower thermal efficiency

of 30 per cent. The best compound condensing, poppet valve, steam engine operated on a pressure of 150 pounds, with 100 degrees superheat and high vacuum, will produce an indicated horsepower hour on 12 pounds of steam. A boiler under such conditions will evaporate 8 pounds of water per pound of coal. The coal consumption per indicated horsepower hour is therefore 1.5 pounds and per brake horsepower hour about 1.66 pounds, which at 13,000 British thermal units per pound represents 21,500 British thermal units or 12 per cent thermal efficiency. The thermal efficiency of the oil engine is, therefore, $2\frac{1}{2}$ times that of the steam engine, and the actual thermal efficiency of the oil engine is very close to the theoretical maximum efficiency of the steam plant.

When installing an oil engine it should be remembered that the oil engine differs from the steam engine in several respects. The first and most important difference is the impossibility of overloading the oil engine appreciably for long periods. The oil engine is the equivalent of the whole steam plant, boiler and engine combined. Overloading oil engines produces results similar to forcing boilers, but in an aggravated form, because the temperature and pressures in the oil engine cylinder are higher. A boiler that is forced for a considerable time shows excessive wear and finally fails. In an oil engine running at overload, the head, piston and valves suffer, entailing expensive repairs. It is therefore essential to select an engine of such size that no overloading will occur under the highest condenser pressure and back pressure. Ninety per cent of all difficulties with oil engines in ice-plant service are due to overloading. It should not be understood that an oil engine must never be overloaded. On the contrary, most oil engines will carry from 20 to 25 per cent overload, and such an overload for an hour or two will do no damage. In an ice plant, however, if there is any overload at all, it will usually last for days.

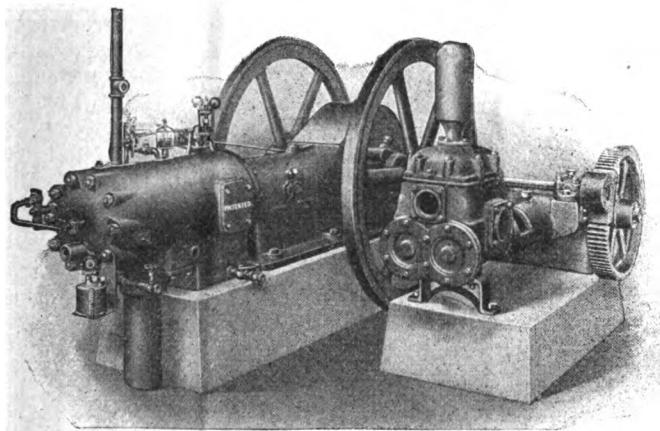
May, 1916

IDEAL POWER

Giant Fuel Oil Engines

Single and Duplex

For Operating Pumps, Generators, Air
Compressors and all Power Purposes



Giant Oil Engine Driving Duplex Pump

Has no Valves, Carburetor, Magneto, or other Electric Firing Devices.

Has Valveless Two Cycle Power Cylinder, Governed Fuel Injection, Hot Plate Ignition, Self-Oiling Lubrication, Cross-head Construction, Perfect Scavenging, Rugged Enclosed Frame, Balanced Cranks.

Send for Bulletin 34-W describing and illustrating Giant Fuel Oil Engines made in sizes 12 to 160 horse power.

Send for Bulletin 34-Q giving data and illustrating applications of Giant Fuel Oil Engines in the operation of pumps, generators, exhausters, fans, etc.

ADDRESS

Chicago Pneumatic Tool Co.

1014 Fisher Building
Chicago

Branches
Everywhere

52 Vanderbilt Ave.
New York

When writing to advertisers please mention Ideal Power.



Baker Air Injector Installation at Dr. L. L. Taylor's Farm at Waupun, Wis. Water delivered by this plant is free from oils, surface water and other impurities. It delivers a constant stream of cool, pure water.

Artesian Way for Pumping Water at Three Cents Per Thousand Gallons With a Baker Air Injector.

The following letter from T. H. Buuck, Chief Accountant, Wisconsin State Prison, Waupun, Wis., gives some basis for comparison between a centrifugal pumping plant and a Baker Air Injector system of deep well pumping.

"We find that a Turbo impeller pump, elec. head, including one hundred feet of Standard, No. 601 pump shafting, a 50 h. p. motor and a special switchboard controlling the latter, also two hundred ninety feet of rubber loaded cable, was bought at a cost of \$2,096.92.

"This system was calculated to amply supply this institution's needs, but it is found that during the year 1914 it had to procure 832,650 gallons of water from the city at a cost of \$130.30, a rate of approximately 15c per thousand gallons. The approximate cost to produce a thousand gallons under the above system is found to have been 9c.

"Compare this with the equipment recently installed in connection with the Baker Air Injector, consisting of the following:

- 1 3" Injector,
- 1 Air Compressor,
- The necessary piping to replace that of the former system,

at a cost of \$667.00. It will be seen that the initial cost of the latter system is not only far below that of the former, but it has been found to more than amply supply this institution's needs, and that at a maximum cost of 3c per thousand gallons. Besides, the above compressor is large enough to handle two wells of the same capacity."

Those interested in Air Lift Pumping Systems, should correspond with the Water Lift Dept., Chicago Pneumatic Tool Co., 1014 Fisher Bldg., Chicago, Ill.

Did She Get the Place?

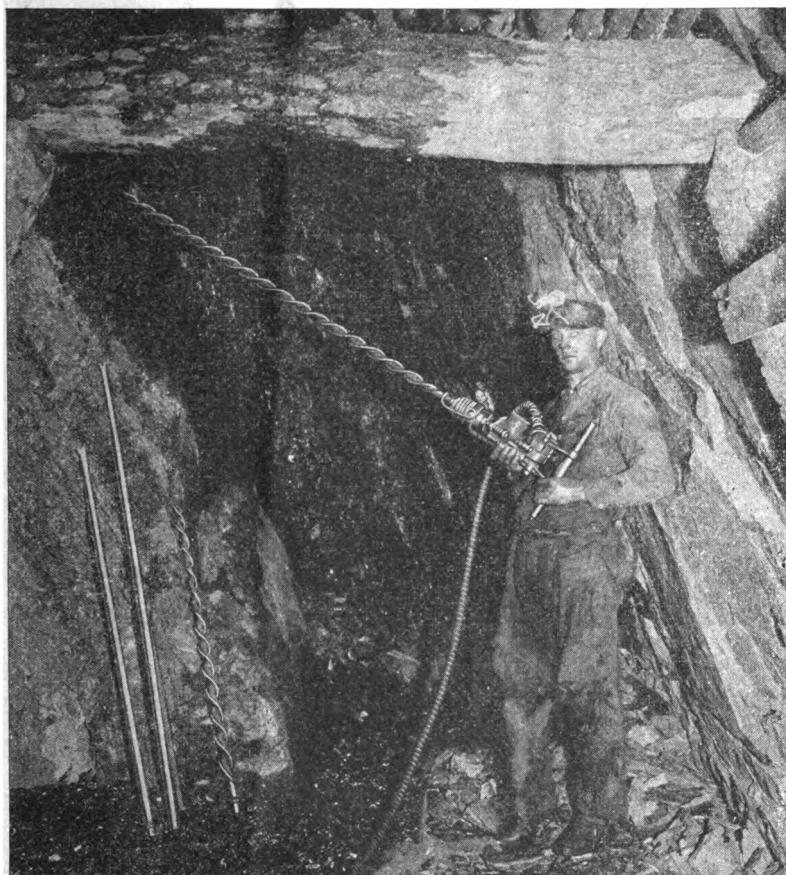
"Oh, yis, mum," said Kathleen, applying for a new situation, "I lived in me last place three weeks, mum, an', though I say it as shouldn't, I gev ixcelent satisfaction."

"And why did you leave?" ventured the lady, who was looking for a servant.

"Sure, I couldn't get along wid th' missus she wor that ould an'cranky."

"But maybe you'll find me old and cranky, too."

"Cranky ye may be, mum, for sweet faces like yours is sometimes deceivin'; but ould ye're not—I can see that at a glance."



Showing an A-66 Hummer Drill in operation in Potts Colliery, Pennsylvania & Reading Coal & Iron Company mines, Ashland, Pa. This machine is driving 5 ft. per shift in the drift which is about 2 ft. of coal and 6 ft. of rock. The tunnel is 6 ft. by 8 ft. The miners are very enthusiastic over the splendid performance of these machines.

World's Salesmanship Congress.

The first World's Salesmanship Congress, to be held in Detroit from July 9th to 13th inclusive, should be a memorable chapter in the history of Salesmanship. The ambitious motto of the congress will be "Business Betterment Through Betterment of Salesmanship." The program announced by the Entertainment Committee is crammed with inviting talks and suggestions on topics of vital interest to salesmen.

Every civilized nation in the world will be represented at its sessions. Wo-

men will be as conspicuous in its activities as men. Salesmen will conduct as many of the meetings as salesmen. Approximately one hundred lectures and discussions have been provided as well as many novel forms of entertainment.

Many of the most famous men in the world of business will take an active interest in the Congress. Even the President of the United States has signified his willingness and desire to address the opening meeting. Every salesman who is ambitious to become a better salesman should arrange his route to take in Detroit during July 9th to 13th.

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON	Editor
Vol. XII	MAY, 1916
	No. 1

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Duntley Base Ball Team.

Chicago Amateur Base Ball Teams were recently organized under the auspices of the Amateur Base Ball Federation, which will be known as the Chicago Manufacturers' Base Ball League. The new league ventures forth with every promise of success for it has the backing of the following leaders in Chicago sports and business who will serve as honorary directors:

B. B. Johnson, president American League.
C. A. Comiskey, president White Sox.
Charles Weeghman, president Cubs.
W. O. Duntley, president Chicago Pneumatic Tool Company.
B. E. Sunny, president Chicago Telephone Co.
J. W. O'Leary, president Chamber of Commerce.
W. P. Sidley, vice president Western Electric Co.
Nelson N. Lampert, vice president Fort Dearborn National Bank.
John D. Shoop, superintendent of schools.
William Hale Thompson, mayor.
Homer A. Stillwell, president Butler Brothers.

The new league opened the 1916 season with the following members:

Chicago Pneumatic Tool Company,
Benjamin Electric Company.
Oscar Heineman Company, silk manufacturers,
Liquid Carbonic Company, manufacturers of soda fountains,
Anderson & Lind Company, electrical supplies.
Stewart-Warner Company, automobile accessories,

The first battle between the Chicago Pneumatic Tool Company's team, known as the "Duntleys," and the Benjamin Electric Company's team was held on Saturday, May 6th. In this engagement a few bobbles and boners leaked into the game, but as a whole the play was speedy, featured by air-tight battery work, and exciting for the spectators. Good crowds helped to encourage the spiked and spangled athletes.

Next to the hard, accurate play of the opening game, the most obvious thing was the enthusiasm that prevailed. Enthusiasm was not confined to the players; it was rife among the spectators, partisan or otherwise. Notwithstanding the keen rivalry, good sportsmanship and lots of it helped to make the opening games really worth while.

Barring accidents, such as typhoons and cloudbursts, the League will stage three games each Saturday afternoon throughout the season. If we may judge by what we saw the first day out, the pennant winner in this League will have to play great ball. Competition looks so keen that the luckiest mascot is likely to decide the championship.

We are reserving a page in a later issue for a photograph of the League champions, assuming, naturally, that the Duntleys will land the bacon. If they continue to display their present pep, ginger, sarsaparilla, and vinegar, we feel sure that our confidence is not misplaced. The destinies of the Duntleys will be directed for the 1916 season by P. J. Hamilton, Manager.

The Chicago Pneumatic Tool Company are now Special Representatives of the Detroit Valve Co., manufacturers of the Detroit Ball Valves, as shown in the accompanying advertisement.

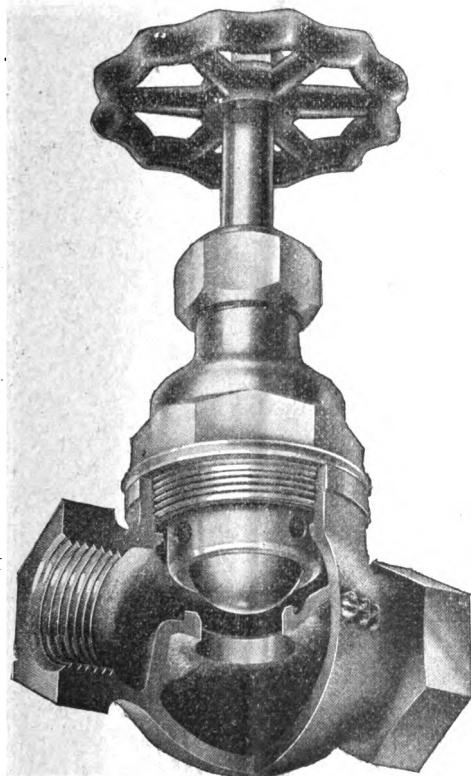
These valves operate on new non-wearing principles so that they give the longest wear without the slightest repair.

For descriptive matter and prices address the Chicago Pneumatic Tool Co., 1014 Fisher Bldg., Chicago.

DETROIT BALL VALVES

Outwear Flat Disc Valves by a Ratio of Ten to One

"Cheaper by test than all the rest"



Sectional view. Detroit Ball Valve. Globe Pattern.

Ball and Socket Construction

The Valve Seat is of a Socket form, being rounded out to a 45 deg. angle, the inside top of the valve cage is a 45 deg. Socket, and the ball is perfectly free in its cage. When the ball takes its seat it makes a ball and socket joint, opening rotates the ball, giving a constantly changing surface each time the valve is operated.

Indestructible Disc

The Ball Valve Disc is made of Bell metal, and is indestructible, being so hard it cannot be machined. Since the ball rests when lowered into the seat, so that it does not have any grinding action on the seat, both seat and ball disc will wear for years and years.

Description of Closing and Opening Operation

In closing, the ball loose in its cage is lowered into its seat, but is not ground in, as is the case with a flat valve disc on a flat seated valve; further turning of valve stem presses the ball tight to its seat, while the cupped cage holder slightly rotates around the ball. In opening, the ball valve cage releases its grip on the ball, lifting it off the seat, without any grinding effect on either ball disc or seat.

Send for descriptive literature and prices.

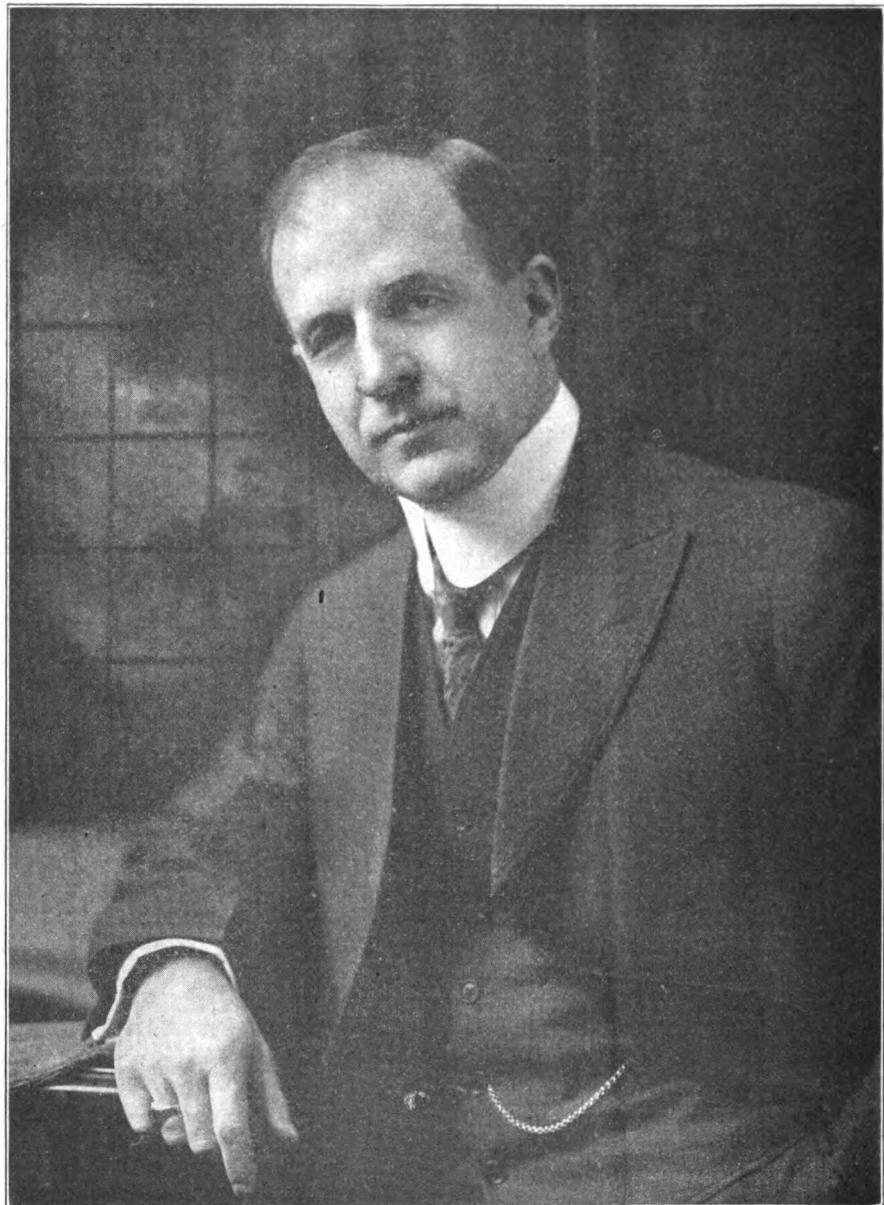
CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building
CHICAGO

Selling Agents
BRANCHES EVERYWHERE

52 Vanderbilt Ave.
NEW YORK

When writing to advertisers please mention Ideal Power.



**John G. Osgood, Recently Elected Vice-President of the
Chicago Pneumatic Tool Company.**

"A well deserved promotion" were the remarks made by Mr. Osgood's friends when the announcement was made of his election to the office of vice president

of the Chicago Pneumatic Tool Co. Mr. Osgood says he was born on a farm down in York state where he learned how to work hard and how to

make hay while the sun shone. The sunshine in which his hay-making was done must have been of unusually fine quality for it gave him an optimistic nature and a sunny disposition which have never deserted him.

"Sunny Jack," as Mr. Osgood's friends like to call him, came with the Chicago Pneumatic Tool Co. nine years ago in the capacity of an assistant in one of the branches of the sales department. Step by step he has advanced, exercising in his business deals a spirit of fairness that wins friends and breeds confidence and respect, reaching at last a goal that places him in a class with the big business men of America.

Mr. Osgood is a member of the Foreign Trade committee of the Chicago Association of Commerce, and belongs to the Illinois Athletic and Chicago Automobile clubs. His home is in Wilmette, a north shore suburb, where he lives with his wife and four children.

Mr. Osgood is an authority on pneumatic tools, likes a good story and handles the cue like a wizard.

Did He Mean Editors of House Organs?

A country school boy was told to write an essay on editors and this is the result:

"Don't know how newspapers came to be in the world. I don't think the Good Lord does, for He ain't got nothing to say about an editor in the Bible. I think the editor is one of the missing links you read of, and stayed in the bushes until after the flood, and then came out and wrote the thing up and has been here ever since. I don't think he ever died. I never seen a dead one and never heard of one getting licked.

"If a doctor makes a mistake he buries it and people dassent say nothin'.

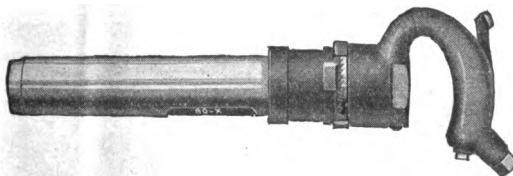
"When the editor makes a mistake there is big swearing and a big fuss, but if a doctor maks a mistake there is a funeral, cut flowers and perfect silence.

"A doctor can use a word a yard long without anybody knowing what it is, but if an editor uses one he has to spell it.

"If a doctor goes to see another man's wife he charges for the visit; but if the editor goes he gets a charge of buckshot.

"Any old college can make a doctor, but an editor has to be born."—*Exchange*.

THE No. 80-X A NEW BOYER HAMMER



8-inch Stroke, Capacity 1-3/8-inch Rivet

The No. 80-X Boyer Hammer meets the demand for a Boyer Hammer with strength sufficient to put down a 1 3/8-inch rivet, but with an overall length that will permit its use in close quarters. The No. 80-X Boyer Hammer is only 21 1/8 inches long overall and weighs only 25 1/2 pounds.

Send for Literature and Prices

ADDRESS

Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

Branches
Everywhere

52 Vanderbilt Ave., New York

Duntley Electric Drills and Grinders

Universal Electric Drills

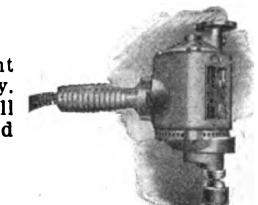
Patented Feb. 18, 1913.

For connection to ordinary lamp socket.

Operating on either direct or alternating current (of 60 cycles or less) single phase, interchangeably.

Cut shows the smallest and lightest electric drill built which will operate on either current. We build seven sizes of drills of this type as follows:

Size No. 000.	Capacity in metal	inch
" 000x.	"	$\frac{1}{16}$
" 00.	"	$\frac{1}{8}$
" 0.	"	$\frac{3}{16}$
" 1.	"	$\frac{1}{4}$
" 2.	"	$\frac{5}{16}$
" 3.	"	$1\frac{1}{16}$



Size No. 000.
Capacity $\frac{1}{16}$ inch in metal

Heavy Duty Direct Current Electric Drills

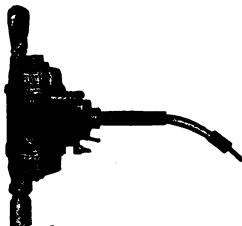
For 110 and 220 volts.

Built in five sizes as follows:

Size No. 0.	Capacity in metal	inch
" 1.	"	$\frac{1}{16}$
" 2.	"	$\frac{1}{8}$
" 3.	"	$\frac{1}{4}$
" 3x.	"	$\frac{3}{16}$
" 4. (Comp.)	"	$\frac{1}{4}$
" 4x.	"	$\frac{5}{16}$
" 5. (Comp.)	"	$1\frac{1}{16}$

The No. 3, 4 and 4x can be furnished in the center spindle as well as the side spindle style.

The No. 3x, 4 Compensated, 4x and 5 Compensated are especially adapted for high speed reaming.



Size No. 0 S-S

Heavy Duty Alternating Current Electric Drills

For two and three phase.

For connecting to two or three phase power lines. Cannot be operated from lamp socket. Built in five sizes as follows:

Furnished in the side spindle style only. Standard windings are for 60 cycles, 110 or 220 volts. Size Nos. 2, 3 and 4 can be wound for 440 volts.

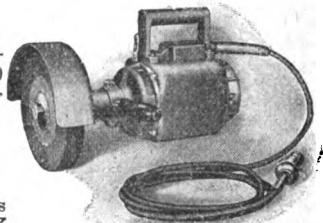
Size No. 0.	Capacity in metal	inch
" 1.	"	$\frac{1}{16}$
" 2.	"	$\frac{1}{8}$
" 3.	"	$\frac{1}{4}$
" 4.	"	$\frac{5}{16}$

Electric Grinders

For use in the foundry, machine and structural shop. Built in two sizes for 110-220-600 volts direct current, and 110-220 volts two or three phase alternating current.

Size No. 5 BP carries $5 \times \frac{1}{8}$ inch wheel
" 8 BP " $6 \times 1\frac{1}{4}$ " "

Universal Grinders can be furnished in three sizes to operate on either direct current or alternating current, interchangeably from an ordinary lamp socket.



Size No. 8 BP Portable Grinder

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building, CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

When writing to advertisers please mention Ideal Power.



"This proves that the Little Giant truck is doing its part to reduce the high cost of paper," says R. J. Burns, Little Giant agent at Pittsburgh, Pa. "The above is a view of a 2-ton Little Giant truck owned by P. A. Schwartz of Monongahela, Pa., loaded with 2½ tons of old paper."

Mononaghela City is located about 25 miles from Pittsburgh, in a valley surrounded by the steepest hills in Western Pennsylvania, but, according to Mr. Schwartz, the truck has not failed to carry its load up the highest hill and under difficult road conditions. Mr. Schwartz is so pleased with the service his Little Giant has given him that he intends to purchase another in the near future.

The Little Giant Truck Gets National Advertising.

Readers of Ideal Power will be interested to learn that the Chicago Pneumatic Tool Company is starting a national advertising campaign for the Little Giant truck.

The growth of the Little Giant truck business in the last eight years has been amazing. The truck itself has stood up splendidly in actual service and its records for mileage, economy and daily dependability have been remarkable.

The Tool Company is backing the Little Giant truck with every dollar of its \$11,000,000.00 capital and surplus, as well as with its engineering reputation and it believes the time is ripe to prove its faith. It will engage in the greatest, most

compelling truck advertising campaign ever planned. This advertising will dominate the entire field of commercial vehicle publicity.

Beginning early in June, the first advertisements will appear—smashing full pages on the Little Giant in the Saturday Evening Post, Literary Digest and a selected list of America's leading newspapers.

Not only has the Chicago Pneumatic Tool Company arranged to back up the Little Giant truck salesmen with this great advertising campaign and in other ways but it has established an "Help-the-Owner" department, which will assure the Little Giant owner of getting good service and the truck of being a profitable investment for him.



A fleet of Little Giant trucks in the service of Robert Hall, Ltd., express carriers, London, England.

The manufacturers of Little Giant trucks play no favorites. Different road and service conditions call for specially constructed trucks. Thus the Little Giant is made in worm and chain drive and in capacities of 1 ton, $1\frac{1}{2}$ ton and 2 tons. Prospective truck buyers are invited by the Chicago Pneumatic Tool Company to write the "Help-the-Owner" department which will gladly recommend the truck most suitable for the required service. Letters should be addressed to the Truck Department, Little Giant Building, 1615 Michigan Ave., Chicago.

Two Irishmen with a gun were hunting. The one carrying the gun saw a bird in a bush and carefully took aim.

"For the love of Heaven, Mike," shouted the other hunter, "don't shoot! The gun ain't loaded."

"I've got to," yelled Mike, "the bird won't wait."

The Little Giant in London.

Not only is the Little Giant one of the most popular trucks in America but it has won a host of friends in Europe, in strictly commercial pursuits. In London, England, there are several well known fleets of Little Giants, all of which have been giving excellent account of themselves. The great commission market of London is known as Smithfield and a recent canvass of this section by a prominent London Magazine, disclosed forty Little Giant Trucks owned by various firms in that location.

The average daily load of the 40 machines was 9,000 lbs. The cost per mile averaged between $4\frac{1}{2}$ d. and 5 d. and the average petrol consumption, 14 miles per gal.

One of the prominent fleets is owned by Messrs. Robt. Hall, Ltd., one of the largest provisioners in England. The following data covering a days' run of one of their trucks was recently obtained.

Three separate journeys were undertaken, two in the neighborhood of Stamford Hill, Tottenham, Bush Hill Park, Ponders End, Edmonton, and Enfield, and the third in the neighborhoods of Upton Park, East Ham, Ilford, Goodmayes, and Seven Kings. In all some 9,500 lbs. of meat were delivered, spread over a matter of 20 deliveries. The total mileage covered was 57 miles, the total running time 5 hours, average speed 11 miles per hour, average petrol consumption 13 5-6 miles per gallon. The investigator delegated by the magazine to accompany the truck and make observations on the above mentioned journeys reports: "Throughout the run the engine showed that it lacked nothing in power, and its powers of acceleration were particularly marked when overtaking traffic. "Little Giant" trucks are particularly well sprung, the riding both with and without load being easy."

He Was There.

Mark Twain said that some years ago, when in the South, he met an old colored

man who claimed to have known George Washington.

"I asked him," relates the humorist, "if he was in the boat when George Washington crossed the Delaware river, and he instantly replied:

"'Lor', massa, I steered dat boat.'

"Well," said I, "do you remember when George took the hack at the cherry tree?"

He looked worried for a minute, and then with a beaming smile said: "Why, suah, massa, I dun drove dat hack m-a-self."

The Squirted Drama.

Ole Johnson came directly from the forests in Sweden to a lumber camp in northern Minnesota. On a recent visit to the city he saw the moving pictures for the first time in his life.

"You yust bet Ay had gude time," he said, relating his experience back at camp, "An' would you believe I'm? Ay vent in vun place where dey squirt pictures on de wall!"

But it is better to quarrel over trifles than over something of real importance.

Do You Need Extra Heavy Wrought Iron Pipe?

If you do we will quote you prices you cannot resist on surplus stock we have on hand of the following:

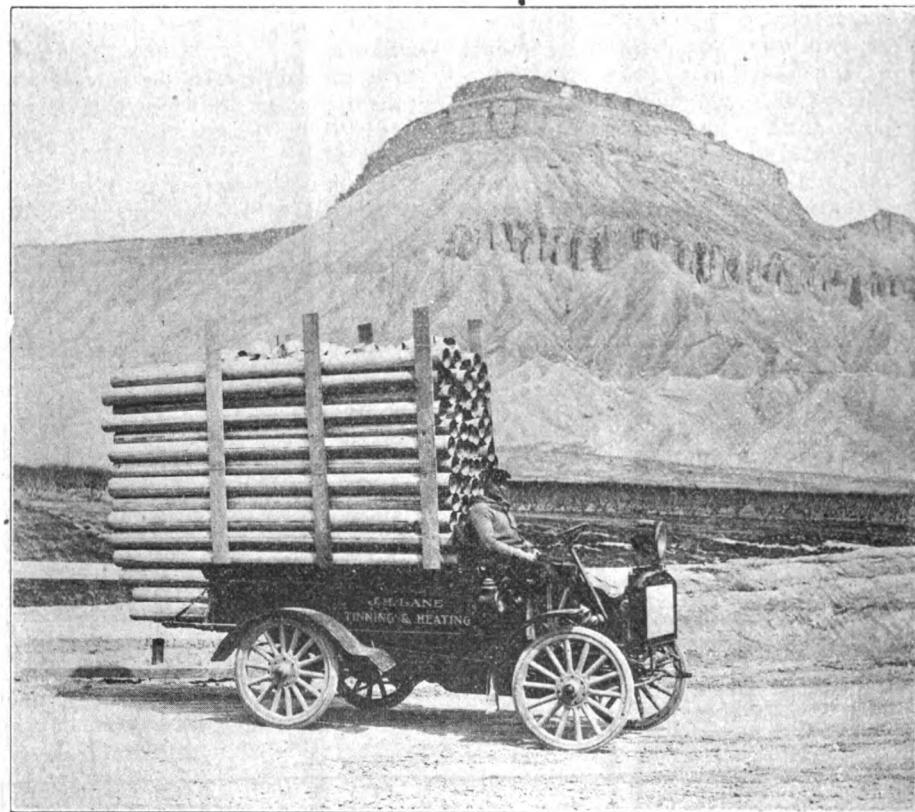
Size	Length	Quantity
3 1/2 in.	6 ft.	14 Pieces
3 1/2 in.	8 ft.	5 "
3 1/2 in.	6 ft.	59 "
3 1/2 in.	8 ft.	5 "
4 1/2 in.	6 ft.	15 "
4 1/2 in.	8 ft.	17 "
4 1/2 in.	6 ft.	43 "
4 1/2 in.	8 ft.	15 "
5 1/2 in.	6 ft.	0 "
5 1/2 in.	8 ft.	4 "
3 1/2 in.	55 ft. long	1 "

CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., Chicago

Branches
Everywhere

52 Vanderbilt Ave., New York



The above shows the Little Giant truck owned by James H. Lane, Tinning and Heating, Grand Junction, Colo. In the distance, Mount Garfield can be seen. This view was taken in the Grand Valley of Colorado, known as the Rocky Mountain fruit country and near Grand Junction, on the famous Midland Trail. Mr. Lane recently wrote as follows about the service he has obtained from his Little Giant truck:

"This makes the fifth year I have been running my 'Little Giant' truck model D. and from the way it is going this year, I think I shall be running it for ten years more at least. This mountain country is certainly a good test. A machine that will stand the hard usage we have put it to here will stand up anywhere. Last year we hauled a load of 1800 lbs. 150 miles up into the heart of the mountains, going over one 15% grade that was 4½ miles long and some grades that were nearly 20%, but not so long. On the trip we got into the mud up to the hubs.

"The 'Little Giant' is certainly there with the goods."

Picking on the Letter "E."

The opinion has been advanced that the letter "e" is the most unfortunate letter in the English alphabet, because it is always out of cash, forever in debt, never out of danger and in hell all the time. It is fortunate in that it is never in war and always in peace. It is the beginning of existence, the commencement of ease and the end of trouble. Without it there would be no meat, no life and no heaven. It is the center of honesty, and makes love perfect. It also starts off in error, and printing, publishing, typography and lithography can get along without it, although it is necessary in electrotyping, engraving and typefounding. It is the beginning and the end of editorial existence.

Blue—What's the technical word for snoring?

Jay—I bite.

Blue—Sheet music.—*Exchange*.

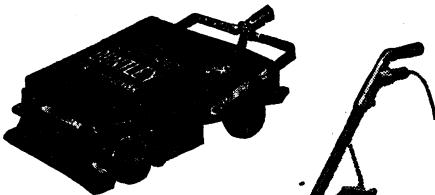
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"But, Eliza," said the mistress, "your little boy was christened George Washington. Why do you call him Izaak Walton? Walton, you know, was the famous fisherman."

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Teacher (to dull pupil in mathematics)—You should be ashamed of yourself. Why, at your age George Washington was a surveyor.

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Applicant for Position—I have here a letter of recommendation from my minister.

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Jenks—Why do you persist in beating time with your feet?

Jones—It's the music in my sole I guess.

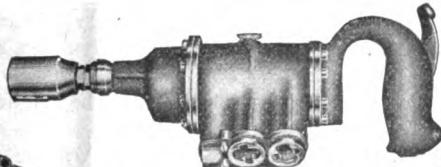
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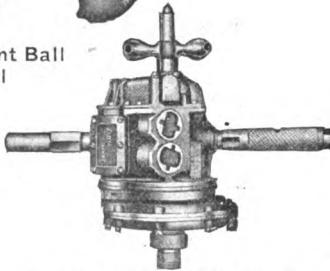
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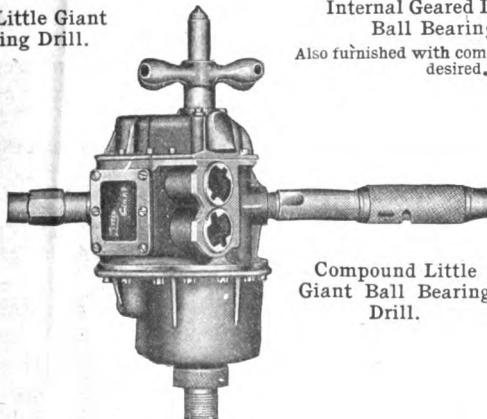
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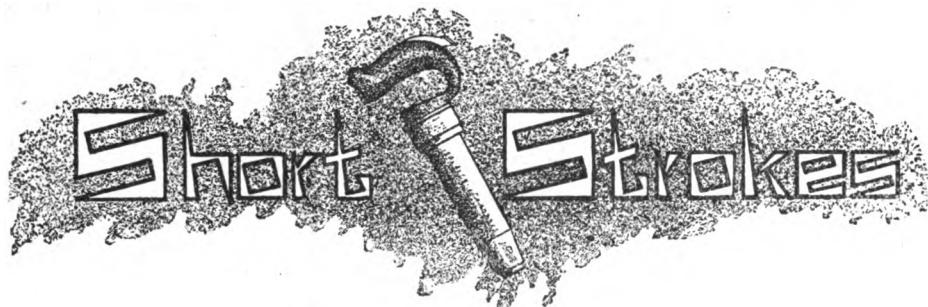
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Blessings in disguise generate some profanity.

The owner of a smart dog does most of the howling.

"If" is the most unsatisfactory word in our language.

The sweetness of revenge often sours the disposition.

When it is silks with the wife it is apt to be sulks with the husband.

The world would have more to worry about if each man could make his own weather.

It's the man who makes a fool of himself that seldom boasts of being self-made.

There's more than one way to shuffle off this mortal coil. That's why doctors often disagree.

At the age of 21 a man attributes all his troubles to "cruel fate." At 50 he blames his "cursed luck."

Of course you are entitled to think what you please, but it isn't always safe to inflict your thoughts on others.

Time waits for no man, but he has to wait at least an hour when his wife tells him to "wait just a second."

Only a man's fool friends will refuse to allow him to use his own judgment as to whether he wants a drink or not.

Silence is golden, except when a counterfeiter.

But the chicken-hearted man crows only in his sleep.

Worry gives the undertaker more business than work does.

We all talk too much—because there is so much to talk about.

There's considerable difference between a kicker and a knocker.

Marriage is a failure for a leap year girl who proposed in vain.

Being remembered in a will is as uncertain as an unlaid egg.

A bride always thinks her husband clever because he married her.

The stage has wings, but that isn't what makes the chorus girls so fly.

Many a girl who loves a man for his money is too modest to mention it to him.

Girls who want to marry are always looking in shop windows for new brands of bait.

The woman who makes fun of a new style one day is usually trying to imitate it the next.

There may be such a thing in the world as pure unselfishness, but nobody seems to be able to locate it.

Beauty is said to be only skin deep, but many a woman's beauty depends upon the size of her balance in the bank.

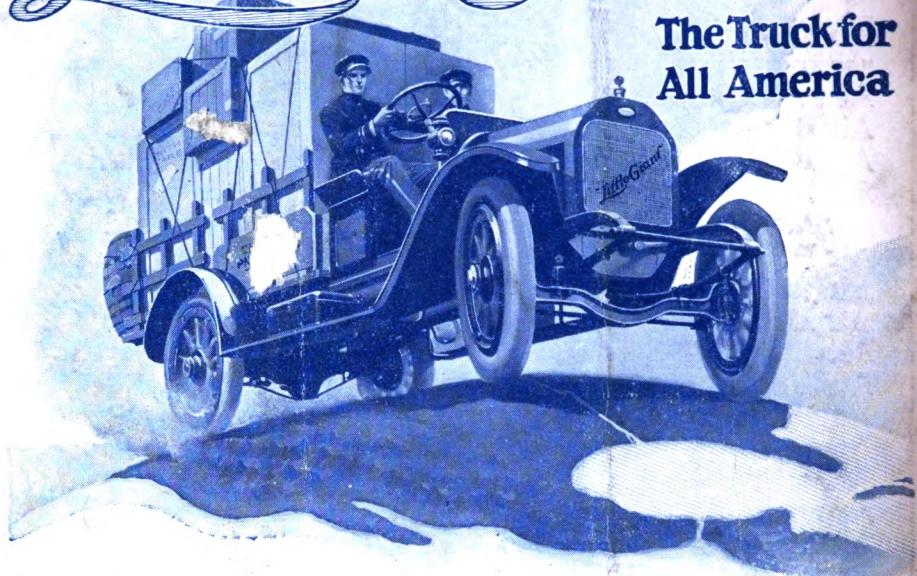
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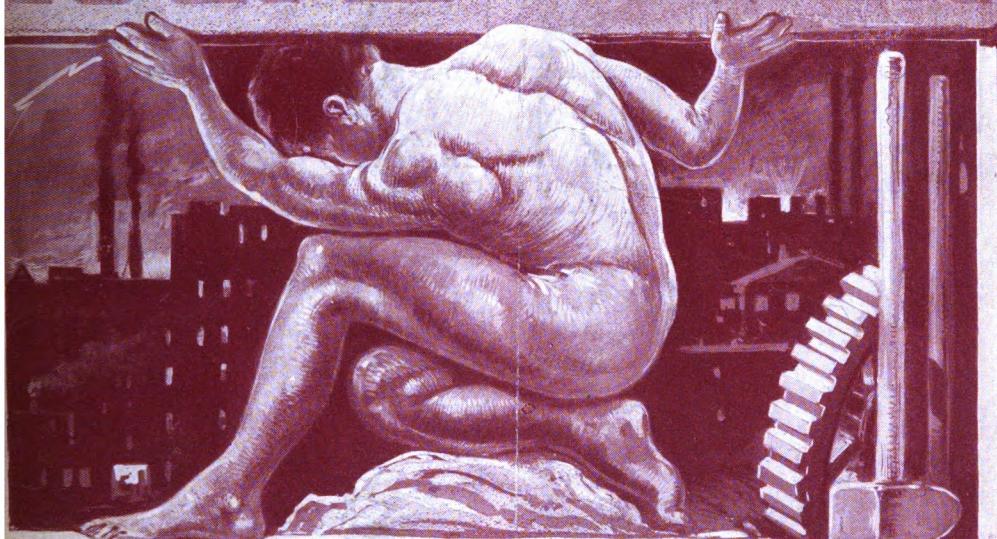
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AUGUST, 1916

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August 29-30-31, Sept. 1, 1916—International Railway General Foremen's Association, at Hotel Sherman, Chicago.

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Sept. 11-16, 1916—The American Institute of Metals, at Hotel Statler, Cleveland, Ohio.

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Sept. 11-16, 1916—National Association of Stationary Engineers, at Minneapolis, Minn.

Sept. 12-14, 1916—Master Car and Locomotive Painters' Association, at Atlantic City, N. J.

Sept. 12-13-14, 1916—Railway Signal Association, at Grand Hotel, Mackinac Island, Mich.

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Oct. 9-13, 1916—American Electric Railway Association, at Atlantic City, N. J.

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Oct. 17-18-19, 1916—Maintenance of Way Master Painters' Association of United States and Canada, at Philadelphia.

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Dec. 5-8, 1916—The American Society of Mechanical Engineers, in the Engineering Societies' Building, New York City.

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Feb. 5-10, 1917—American Road Builders' Association, at Boston.

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Boiler Makers' Supply Men's Association—Secretary, Geo. State, The Boiler Maker, 17 Battery Pl., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, A. La Mar, Master Mechanic, Penn R. R.,

Chicago, Ill.; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. and D. Ry., Lima, Ohio.

International Railway Fuel Association—Secretary-Treasurer, J. S. Crawford, 702 E. 51st St., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1126 W. Broadway, Winona, Minn.

International Union of Steam and Operating Engineers—President, Matt Comerford; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President—Andrew S. Greene, Big Four R. R., Indianapolis, Ind.; Secretary-Treasurer, Harry D. Vought, 65 Liberty St., New York City.

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Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association of United States and Canada—Secretary, F. W. Hager, The Denver Road, Ft. Worth, Texas.

National Association of Manufacturers—President, Col. Geo. Pope, Hartford, Conn.; Secretary, Geo. S. Budinot, New York City.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary-Treasurer, C. W. Kelly, Chicago, Ill.

Pacific Northwest Society of Engineers—President, Archibald Downey, Secretary, Harrison S. Taft, Central Bldg.

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Railway Equipment Manufacturers' Association—President, F. N. Bard, Barco Brass and Joint Co., Chicago; Secretary, W. E. Brumble, Galena Signal Oil Co., Richmond, Va.

Railway Signal Association—President, W. J. Eck, Southern Ry., Washington, D. C.; Secretary, C. C. Rosenberg, Bethlehem, Pa.

Railway Storekeepers' Association—President, J. G. Stuart, G. S. K., care of C. B. & Q. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, Ohio.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary, P. J. McAndrews, C. & N. W. Ry., Sterling, Ill.

Travelling Engineers' Association—Secretary, W. O. Thompson, N. Y. C. Car Shops, East Buffalo, N. Y.

A Kentucky colonel of the old school had made it a proud boast that he hadn't drunk a glass of water in twenty years. One day the train on which he was riding was wrecked while crossing a bridge, and plunged into the river. They pulled the colonel out with a boat-hook, and when they got him on shore, one of his friends rushed up, crying:

"Colonel, are you hurt?"

"No!" he snorted. "Never swallowed a damn drop!"



"CLEVELAND" Bridge Reamers

These reamers are designed for rough, severe service in structural iron and steel work and boiler plates. They are particularly adapted for use in pneumatic and electric portable tools.

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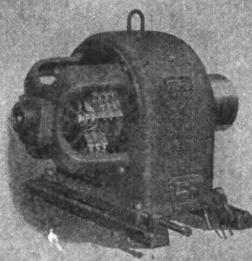
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BULLETIN 109

ALBANY, N.Y.
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DIRECT-CURRENT MOTORS AND GENERATORS

Watts 25 to 1000 H.P.



Direct Current Motors

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Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XII

AUGUST, 1916

No. 2

Motor Trucks Give Extra Hour of Industrial Daylight

An Interview with President W. O. Duntley

Motor trucks have solved that "extra hour of daylight" discussion as far as business is concerned, in the opinion of W. O. Duntley, president of the Chicago Pneumatic Tool Co., and pioneer builder of trucks.

Compared with the horse-drawn method, the motor truck adds an hour to each end of the day, he says, with the result that "motorize" has become the transportation watchword and the motor truck an industrial necessity.

"Heretofore, interest has been concentrated in the pleasure car side of the automobile business, said Mr. Duntley"; but now business concerns large and small are regarding the automobile truck as the vital part of their life. Business men have been aroused through this remarkable interest in business efficiency, and have come to regard the motor truck as a big money-saving factor in their welfare—as a labor-saving device keeping the efficiency pace.

"Business men have speeded up efficiency in their factories and in their selling department; but they have overlooked the other factor which is so essential to the conservation and expansion of both manufacturing and selling the finished product.

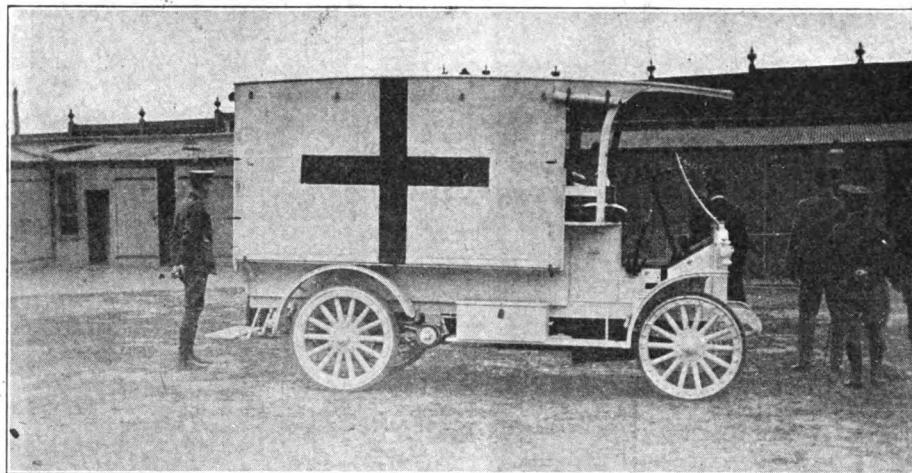
"During the past twenty-five years, the Chicago Pneumatic Tool Company has

been devoting the concentrated brain power of the country's greatest inventors and engineers in the development and manufacture of all manner of labor-saving devices-tools for the speeding up of all manner of work.

"Eight years ago, we came to a realization of the fact that the transportation problem presented one of the greatest opportunities for a labor-saving device; with the result that interest was at once concentrated on the production of a labor-saving tool of transportation—the motor truck.

"Pneumatic riveting-hammers were used by erection engineers to speed up construction work. Other mechanical, labor-saving tools were designed and constructed to speed up all manner of other operations. How could they keep pace with the advanced speed of manufacturing and building, unless they were able to speed up means of transportation? The motor truck was the logical solution of this problem.

"The Chicago Pneumatic Tool Company was the logical organization to undertake the manufacture of a satisfactory motor truck because of the inventive ability of its engineers, because of the precise training of its mechanics, because of its ability to produce for its countless customers what was to be the greatest



A Little Giant in the Red Cross Service. Ten of these are with the Australian contingent "somewhere in Europe."

labor and time-saver of all—the motor truck.

"The means at hand enabling the most searching tests of materials, the same micrometer tests of finished working parts, down to the thousandths of an inch that typify the efficient manufacture of other tools, based on years and years of successful training and manufacture, place the Chicago Pneumatic Tool Company on a pinnacle of importance as the builder of the labor and time-saving motor truck. During the past two years the Little Giant truck has been perfected to a point where it is now entrenched in a position of strength, in line with the best production of the Chicago Pneumatic Tool Company.

"Efficiency engineers and systematizers universally have given the motor truck the position to which it is entitled as a dividend payer, lowering, as it does, the cost of hauling, widening the range of operations, placing at the owners' disposal a twenty-four hour, three hundred and sixty-five-day service under any and all weather conditions, and giving at minimum cost the power to equalize the speeding up throughout other departments, and—one of the most important considerations—satisfy the demands of customers for greater speed all along the line."

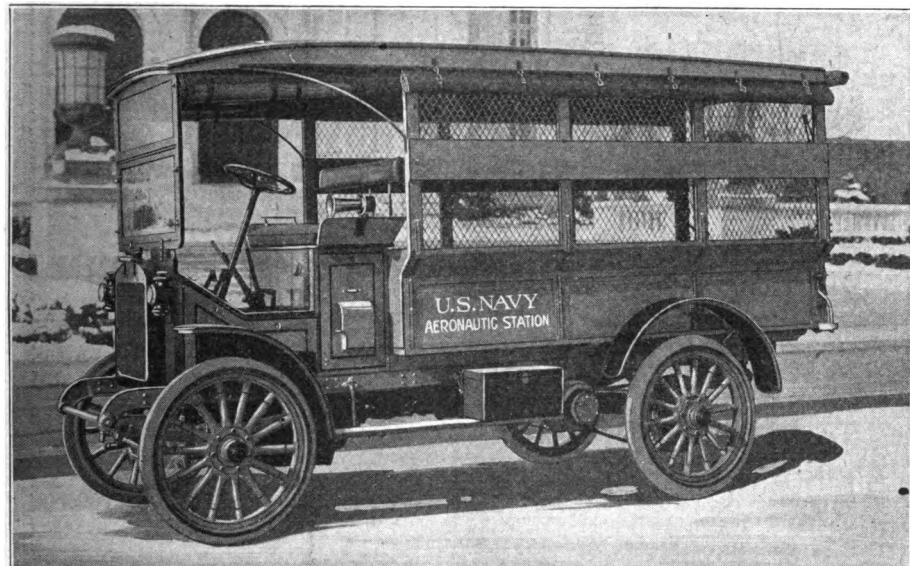
Navy Aero Service Installs Little Giant Motor Trucks.

Preparedness propaganda is taking visible effect in increasing the efficiency of the U. S. Aeronautic service. The navy department has recently installed a motor truck tender service at aeronautic stations for the transportation of knock-down aeroplanes, supplies and ammunition.

The extremely wide range of traction conditions necessitated exhaustive tests by U. S. engineers, who finally adopted the Little Giant Model H, 1-ton chain drive as the best adapted to deep sand and mud, and because of its performance on rough roads and steep grades.

The Little Giant truck here pictured was photographed in Washington at the time of its acceptance by the naval authorities. It is now on duty at the Pensacola, Fla., U. S. Naval Aeronautic Station, where it is called upon to transport heavy loads over stretches of deep sand and rough going encountered in the serving of aeroplanes on the government's proving grounds.

This installation is prophetic in connection with recent developments in both the army and navy, where the motor truck as a means of rapid transportation



A Little Giant in the service of Uncle Sam, attached to the Aeronautic Service of the U. S. Navy in Florida.

as well as an armored fighting machine, is playing an important part.

The absolute necessity of the motor truck has been eloquently demonstrated during the past few weeks in keeping up traffic communication between supply bases and the extended United States lines of march in Mexico. In short-cutting distances not traversed by railroads, the motor truck is solving a great transportation problem for our country in times of peace, and in defense of its rights and policies.

A Long Shot.

Ma—You've been drinking. I smell it in your breath.

Pa—Not a drop. I've been eating frog's legs. What you smell is the hops.

Skinner Mulvey says: Bud Connors will deliver a lecture on the Panama Canal. It will be illustrated with slides. Old Pop Hilsey has shaved off his mustache so's he can smoke his cigars closer.

Little Giant Truck Makes Perfect Score in 142 Mile A. A. A. Rigid Test.

On the recent reliability run of motor trucks from Los Angeles to San Diego, the Little Giant Model 15 Worm Drive truck made a perfect score, carrying a capacity load.

This is one of the most successful demonstrations of commercial vehicle efficiency in the history of the industry.

At the close of the gruelling run of 142 miles, rigid tests were made at the grounds of the Panama-California Exposition, and all working parts found in perfect condition.

The two-day grind proved that the modern motor truck is equal to the severest tests, and it further demonstrated the phenomenal progress that has been made in the design and construction of the freight-carrying machine.

Carrying a capacity load, the Model 15 Little Giant truck finished the trip in good mechanical condition, and was not tardy at any of the three controls.

Mr. H. L. Miller, Pacific Coast distributor, had charge of the Little Giants in this test.

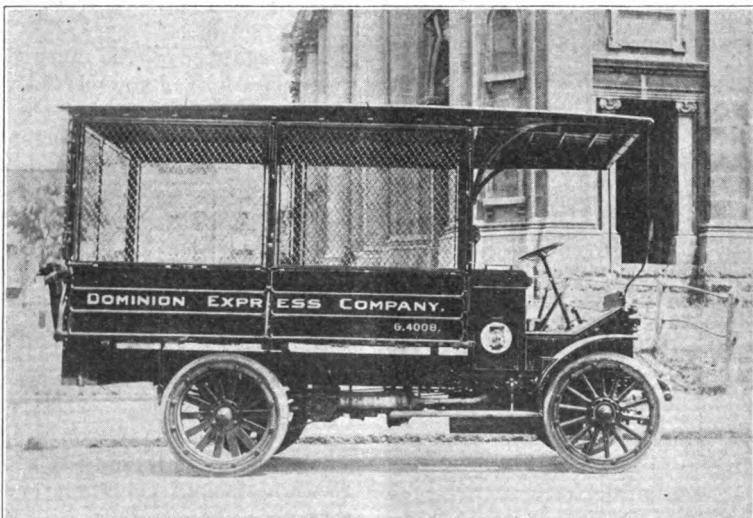


A Model 16 Two-Ton Little Giant Truck delivering the goods in Chicago, while attracting the attention of prospective customers through its strong advertising display.

The Little Giant in Canada

Nowhere has the Little Giant Truck made greater strides than in Canada. The Dominion Express Company of Montreal is the latest addition to the Little Giant fold—strenuous and repeated tests having convinced them that the Little Giant had the power and endur-

ance that is required of motor trucks in express service. Mr. Geo. J. Sheppard, Manager of the Canadian Branch at Montreal, has just wired an order for four 1½-ton Little Giants and is enthusiastic over the business he has booked and the prospects in sight. This will be a banner year for the Little Giant in Canada.



A Model H Little Giant in express service in Montreal. The short wheel base of the Model H permits of its use in extremely congested districts, making it an ideal truck for express service.

SEND FOR THIS BOOK

**Delivery and Hauling Problems
are Discussed by Experts**

**MAKING DELIVERIES
DELIVER
PROFITS**

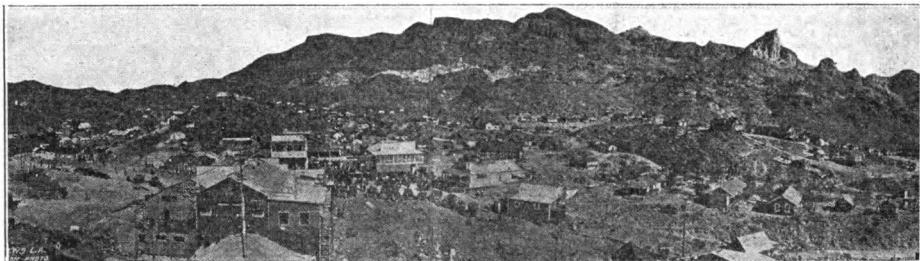


This is a facts-is-facts transportation book of net truths—tabulated results—specific information and advice—worth many, many dollars to the man who has hauling or delivery problems. It covers a wide scope of industries and should be intensely interesting to every man who has goods to haul.

This booklet represents a sincere and consistent effort on the part of the Chicago Pneumatic Tool Company to give concrete and useful information on hauling methods for increased profits.

A COPY OF THIS BOOKLET WILL BE SENT TO EVERY IDEAL POWER READER WHO REQUESTS ONE. ADDRESS

Chicago Pneumatic Tool Company
Little Giant Building CHICAGO 1615 Michigan Avenue



A birds-eye view of Oatman soon after the boom struck it. "Chicago Pneumatic" Fuel Oil Compressors and other modern machinery are now assisting the miner in his quest for gold in this vicinity.

Oatman the New Eldorado.

Oatman, the new "land of promise" is booming. If a tenth of the tales of its enthusiastic citizens is true, Oatman in the years to come will produce more gold than the Klondike, Reno and Goldfield together.

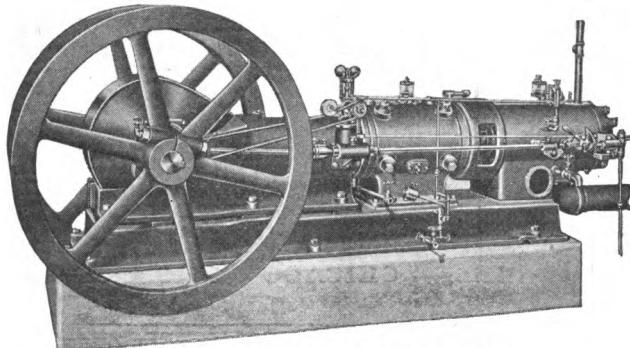
A year ago with the exception of two small mines, Oatman was a lonesome desolate desert, peopled mostly with rattlesnakes and lizards. Today it is a hustling little city teeming with a population of many thousands, containing cottages, mills, banks and stores with paved streets and projects on foot for water works, electric lights and railroads. Such is the short biography of the new Eldorado.

Mr. M. W. Priseler, Western manager of the Chicago Pneumatic Tool Co., acting as staff reporter for Ideal Power, recently wrote: "When I first went to Oatman there were only a few shacks and two or three stores. My quarters consisted of a mattress on the

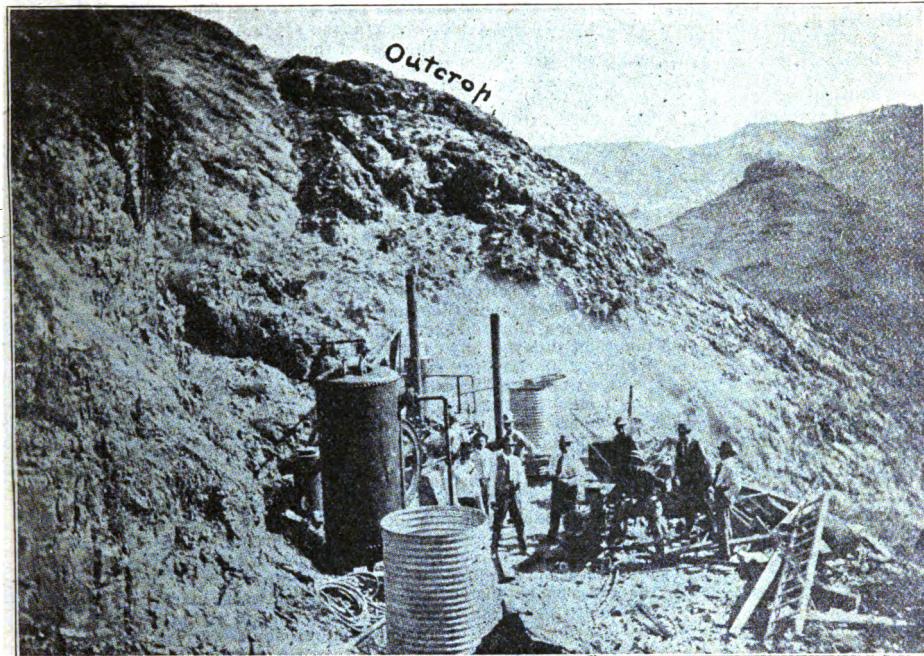
floor in the back end of a little grocery store, without any roof above and a constant scurrying of rats around you and below. It is absolutely true we couldn't wash our face and hands in the morning for lack of water and we paid \$1 for two fried eggs."

The story of Oatman is the story of a town that "came back." Gold was discovered there in the late '70s by a Mexican, Jose Jeneres, and news of his discovery brought the usual rush of gold seekers. But the pockets of gold were shallow and one by one the miners left and the mines closed down with the exception of the Gold Roads mine and the Tom Reed. The two latter, however, have been constant producers for many years.

The wild days of the old gold camp have not been resurrected in the newer Oatman camp. The broad hat and long hair of Wild Bill and Captain Jack Crawford, together with the buckskin sack of gold are missing from the pic-



N-SO Chicago Pneumatic Fuel Oil Compressor.



A "Chicago Pneumatic" Fuel Oil Compressor Installation at the Mines of the Jerome-Oatman Mining Co., Oatman, Arizona.

ture. No red liquor (for Arizona is prohibition), no Keno, no killings, no click of poker chips recall the good old days. The burro has been succeeded by the auto and motor truck. Only the gold and the growing crowds recall to Oatman its almost forgotten past.

Oatman offers little opportunity for the man with nothing but pick and shovel to go out and scratch a fortune out of the ground. The new veins are found 300 or more feet deep. Skilled engineers, systematic management, large staffs of workmen, up-to-date buildings and the latest mining machinery are required to produce gold profitably. Prominent among the mining machinery installed by the new mines are many "Chicago Pneumatic" Compressors. The illustration above shows a "Chicago Pneumatic" class N-SO Fuel Oil Driven Compressor in operation at the mine of the Jerome-Oatman Mining Co. Many other "Chicago Pneumatic" Compressors have since been installed in this district.

The Gold Road, with its \$4,000,000 of dividends, the Tom Reed, with over \$3,000,000 of dividends and the United Eastern with over \$10,000,000 in gold blocked out, entitle Oatman to serious recognition as one of the greatest gold camps in the world. The magic wand of fortune touched Goldfield nine years ago when the world's demand for gold was acute. Today fortune responds to the world's cry for more wealth to offset the waste of the European war by pointing to Oatman.

"Johnnie," said his father, "I'm surprised to hear that you have dared to dispute with your mother."

"But she was wrong, pa," replied Johnnie.

"That has nothing to do with it," said the father; "you might just as well profit by my experience and learn once and for all that when a woman says a thing is so, it is so, whether it is so or not."



The above photo shows a 16x10x12 "Chicago Pneumatic" Compressor Company, near Boise Basin, Idaho, the sale having been made

The Boise Basin, situated about sixty-five miles northeast of Boise, more placer gold than any other one locality, and scores of miners ations in this territory. All indications seem to prove that the Diana furnished the gold for the placer mines.

A Large Compressor Economically Operated.

Yellow Aster Mining and Milling Company, Randsburg, California, is strong for Chicago Pneumatic Compressors as evidenced by the following letter addressed to our Los Angeles office:

In answer to your inquiry as to our new 1200 cubic foot Class O-CB, two-stage power driven air compressor of your make which we purchased from you some time ago—it is very seldom that I feel like going into print, but this installation has been so satisfactory, and we have been so courteously and fairly treated by you, that I feel called upon to express my heartiest appreciation of your company and the service which it renders.

Regarding the compressor—as you know we had considerable trouble with two different makes and naturally we were of the opinion that we might have trouble with yours, so were very skeptical. Immediately after the last bolts were tightened and the installation work completed, the power was turned on and the machine has been operating continuously ever since.

We like the self-oiling and noiseless features very much, and as for efficiency, your step capacity regulation at partial and no loads shows immediately that it is very efficient over others from the readings on the ammeter.

The large capacity inter-cooler is also very effective in getting best possible economy, especially in this climate



or arriving through eight feet of snow at the mines of the Diana by the F. C. Richmond Machinery Co., of Salt Lake City, famous in the gold mining history of the country for producing and becoming fabulously rich as a result of their placer mining operations Co., Ltd., have fortunately discovered the Mother Lode that

where we have such long continued hot weather.

You may refer any of your customers to us at any time.

Very truly yours,

W. J. COTTON,
2d Vice Pres't. & Mng. Director.

Advantages of the Crosshead Construction of Giant Oil Engines.

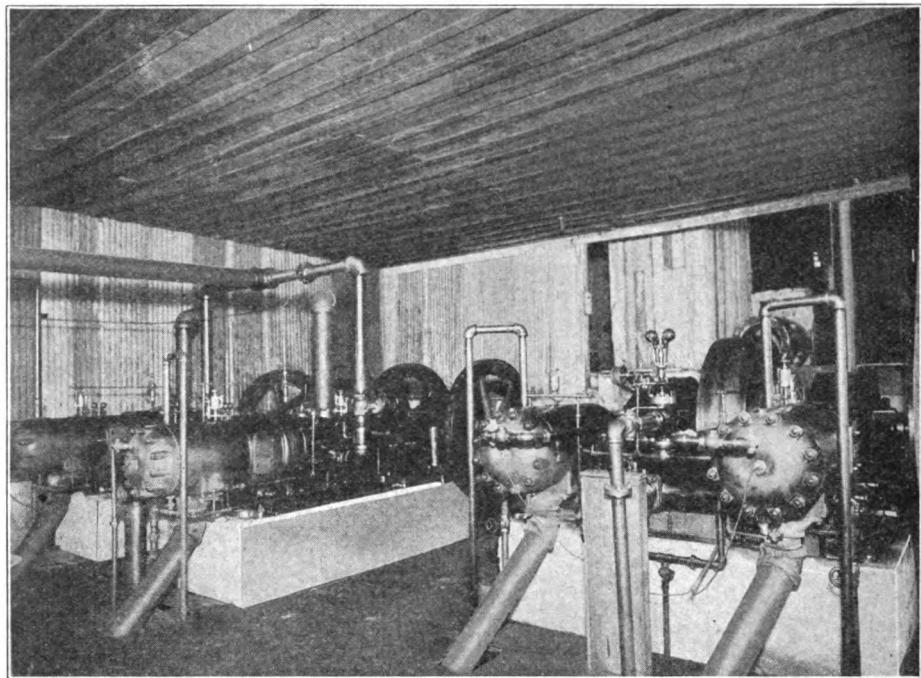
In any two cycle engine not fitted with a crosshead it is necessary to have the crank case as nearly air tight as possible. The compressing of the air for scavenging the cylinder must be done in the crank case and if it is not tight, air will leak out and impair the scavenging, and therefore the proper operation of the engine. This is so important that some

builders put stuffing boxes on the outer ends of main bearings. The crank case covers are all necessarily small and are bolted down on gaskets. This makes the parts within the case very inaccessible.

In GIANT engines the air for scavenging is compressed in the crank end of the cylinder and the crank case therefore does not need to be air tight.

When a crosshead is not used it is much more difficult to keep the bearings and particularly the piston pin; which must be used in all such engines, properly lubricated. Splash lubrication is dangerous because the lubricating oil in the crank case is liable to be carried through the intake port with the scavenging air and cause the engine to run away.

In GIANT engines the crosshead construction permits the crank end of the



Two "Chicago Pneumatic" Class N-SG 14x9½x14 Gas Driven Compressors and one Giant Class A-DG 14x14 Gas Engine used by the Coralbut Mining Co. at Chitwood, near Joplin, Mo. There are dozens of similar installations in the Joplin district, and Giant Gas and Fuel Oil Engines are everywhere giving wonderful results.

cylinder to be closed, hence, lubricating oil cannot reach the transfer port and splash lubrication can be safely used.

When no crosshead is used the piston must act as a crosshead and the cylinder act as a guide. In such an engine the piston must be made longer than otherwise necessary, in order to have room for the piston pin and to prevent as much as possible excessive wear on both piston and cylinder, caused by the piston being forced hard against the top and bottom of the cylinder by the action of the connecting rod.

This uneven cylinder wear can never be entirely prevented without the use of a crosshead, and as it increases it permits oils of heavy base to work back and under the piston rings, hardening there and causing additional wear. The disadvantages do not stop here. The extra friction covered by lengthening the cylinder and crosshead is greater than the friction of a crosshead.

In GIANT engines the use of a cross-head permits both piston and cylinder to be shortened. Friction is also minimized, and the forcing of the piston against the top and bottom of the cylinder entirely prevented.

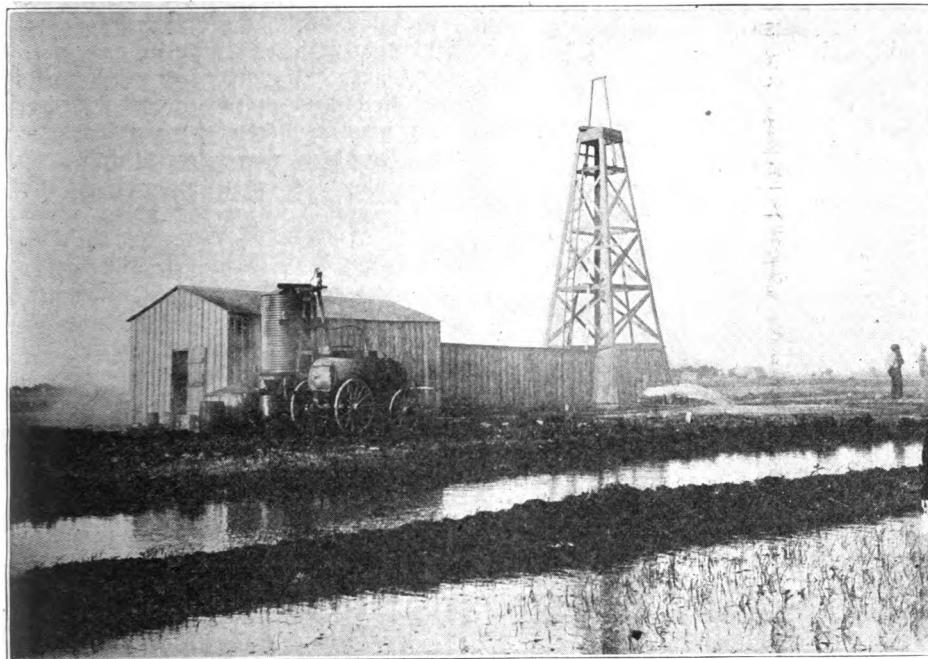
Crosshead construction adds great stability to a machine. There is little doubt but that the addition of this one feature doubles the working life of an engine.

If you are interested in Fuel Oil Engines send for Bulletin 34 W, which tells all about the Giant.

"The evening wore on," continued the man who was telling the story.

"Excuse me," interrupted the would-be wit, "but can you tell us what the evening wore on that occasion?"

"I do not know that it is important," replied the story teller, "but if you must know, I believe it was the close of a summer day."



View of Pumping Plant of Z. T. Young, Opelousas, La. A Class A-DO Giant Fuel Oil Engine furnishes the power. Last season 315 acres of land were irrigated, yielding 4,000 bags of rice. Those interested in the pumping of deep wells should correspond with our Water Lift Department.

True Patriotism.

During a peculiarly bad dust storm at one of the camps a recruit ventured to seek shelter in the sacred precincts of the cook's domain.

After a time he broke an awkward silence by saying to the cook:

"If you put the lid on the camp kettle you would not get so much dust in your soup." The irate cook glared at the intruder and then broke out:

"See here, my lad, your business is to serve your country."

"Yes," interrupted the recruit; "but not to eat it."

A tailor in a certain town had as a sign an apple, simply an apple. People came in crowds to the tailor, asking him what on earth the meaning of the sign was. The tailor replied, "If it hadn't been for an apple where would the clothing business be?"

Roundabout.

Necessity is the mother of invention, and the hungry Frenchman told about in a biography recently published in England illustrates the old adage anew.

He was in an English restaurant and wanted eggs for breakfast, but had forgotten the English word. So he got around the difficulty in the following way:

"Vaiterre, vat is dat walkin in the yard?"

"A rooster, sir."

"Ah! and vat you call de rooster's wife?"

"The hen, sir."

"And vat you call de children's of de rooster and his wife?"

"Chickens, sir."

"But vat you call de chicken before dey are chickens?"

"Eggs, sir."

"Bring me two."

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C. I. HENRIKSON	Editor
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No. 2	

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United States, Canada and Mexico, 25 cents per year
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Send 25 cents and have your name put on our
subscription list.

A Cordial Invitation.

Visiting members of the American Foundrymen's Association, their guests and others are cordially invited to visit the Chicago Pneumatic Tool Company's Exhibit at the Coliseum in Cleveland, September 11th to 18th during the Foundrymen's Convention. Special efforts are being made by those in charge to make the convention a memorable success, and all who can so arrange their affairs are urged to attend and lend their support. The exhibit will be complete and will represent the last word in every branch of foundry practice, and to keep abreast of the times, no one who has common cause with foundrymen can afford to stay away. And don't fail to visit the Chicago Pneumatic Tool Company's exhibit in the Coliseum and let its representatives give you the glad hand.

Situations Wanted.

Wanted: Position with live tank manufacturer as superintendent. Can handle riveting gangs with up-to-date result getting methods. Several years experience. Address Ideal Power Ad. 20.

Situation Wanted—By a man with seventeen years experience as superintendent of steel plate and sheet metal construction, tank work. Thoroughly familiar with the handling of men. Best references. Address Ideal Power, Ad 21.

A Word From Our Sporting Editor

Fighting one's way upward in a pennant fight as hot as that in progress in the Chicago Manufacturers' League is like climbing a greased pole with your right hand tied behind your back, but the "Duntleys" have been doing that very thing. After a hard luck start, when every break of the game seemed always to favor the enemy, they dug their spikes in hard and started back up the ladder. Manager P. J. Hamilton has his boys doing the Royal None-Such now. They are coping game after game. They are at this moment securely clamped in third place, and were the schedule only a few weeks longer than it is, their present stride would surely carry them into first place to stay.

It has been a great season. There has been no strife in the League to make conditions unsatisfactory. Every team has gone into its games with the proper ideas of sportsmanship, and the games have been decided on their merits, aided and abetted by the hope and despair of gamblers—luck. It can not be doubted that the friendly feelings engendered by carrying through a schedule such as this have a splendid effect for all concerned. There is no doubt that the League will continue its operations next year, broadening out so as to include more members and produce even better results.

At the ripping pace the Duntleys are now traveling, a post-season jaunt to the Detroit or Cleveland Plant seems assured.

Security Wanted.

Mr. Ball met a man whom he knew one morning on his way to the office, and the man asked for a loan.

"Suppose I decide," said Mr. Ball, "to let you have the money, how do I know that I shall get it back at the time you mention?"

"I promise it," replied the man, "on the word of a gentleman."

"Well," replied Mr. Ball, "in that case I may conclude to do it. Come around to my house this evening and bring him with you."—Exchange.

DRY, glazed, stiff and cracking. These four words describe the average condition of most belts after they have seen even limited service. The fault is not with the belt, not with its manufacturer. A logical reason explains why *good* belts will undergo this dry decay. The process of tanning, of working the minute fibres of the hide into leather, completely removes its natural oils and greases. When in service these leather fibres should be re-supplied with a lubricant which approximates the original ones removed. Such a lubricant is



SOLDCO

SOLDCO is a scientific preparation. It lubricates, as nature originally did, each fibre surface, making its movement upon its neighbors free, even, non-tearing and frictionless. It is in fact a *natural* leather food and conditioner.

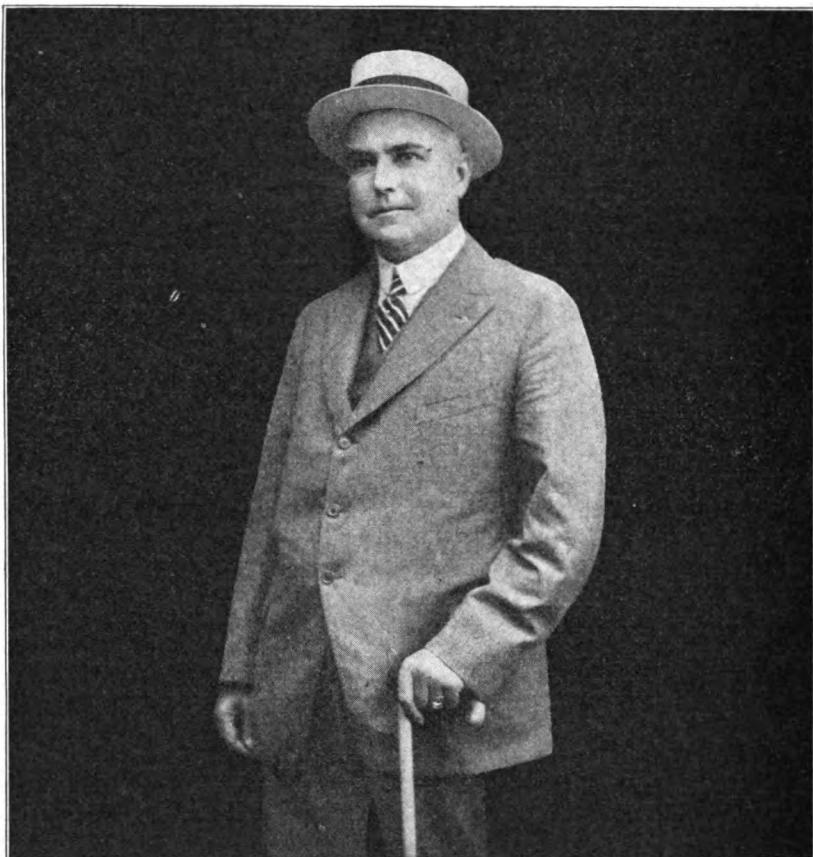
SOLDCO is not a dressing, does not produce a polish or finish. It is free from all acids, chemicals or injurious ingredients of any description. Furthermore, it is non-volatile, non-inflammable, non-combustible and keeps its natural liquid state under all atmospheric conditions.

Users of SOLDCO are innumerable. They are found in widely diversified fields—anywhere that leather is in use.

WRITE You should know all about SOLDCO, because of what it means as an efficient champion of the longest life and best service leather can give. We will gladly forward complete information if you will but request it. Also write for prices. Do it now.

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FISHER BUILDING, CHICAGO
295 FIFTH AVENUE, NEW YORK CITY



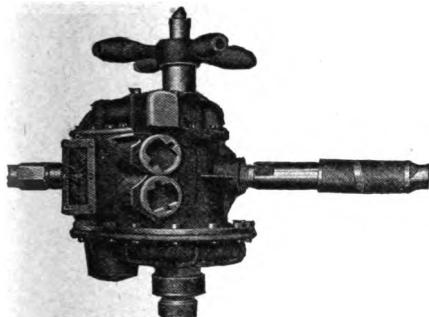
C. E. WALKER,
Manager Railroad Department, Chicago Pneumatic Tool Co.

C. E. (familiarly known as "Charley") Walker, manager of the Railroad Department of the Chicago Pneumatic Tool Co., is a railroad man from the word "Go," having been engaged in railroading in some capacity since he was a kid. It was with the National Locomotive Works, Connellsville, Pa., that he struck his first real job, working in various capacities in the mechanical department, until in 1883, when he accepted the position of roundhouse foreman with the C. H. & D., at Cincinnati. Two years later he became general foreman for the Cincinnati Southern at Ludlow, Ky., a position he occupied for three years. In

1888 he became locomotive engineer on the C. N. O. & T. P., but returned in the following year to the C. H. & D. as general foreman at Lima, Ohio. He was soon promoted to the office of master mechanic at Cincinnati, a position he filled until 1892, when he was appointed superintendent of motive power of the T., St. L. & W. at Frankfort, Indiana.

In 1895 he went with the B. & O. Southwestern as master mechanic at Washington, Ind., where he remained until 1899, when he accepted the Chicago Pneumatic Tool Company's offer to take charge of the St. Louis office. Two years later he removed to Chicago, taking up duties as manager of the railroad de-

DRILL WITH AIR



the long life and the economical upkeep and air consumption for which these machines are famous.

Send for Bulletin 127

USE Little Giant Ball Bearing Drills for Drilling, Reaming, Flue Rolling, Tapping, Wood Boring, Etc.

The Ball Bearings

The increased port areas

The directness of port passages

The increased diameter of thrust bearings

The hand holes in cylinders, and

The method of bolting the bonnets and gear cases to the cylinders are features of Little Giant Drills resulting in the high power, resulting in the high power,

Chicago Pneumatic Tool Co.

1014 Fisher Building, Chicago

52 Vanderbilt Ave., New York City

BRANCHES EVERYWHERE

partment, a position he has filled ever since.

Charley Walker has an unusually wide acquaintance among railroad men and in the railway supply field generally, and such of our readers who have had the pleasure of meeting him will recognize him from the excellent likeness we reproduce above.

The farm hands were taking turns at the pump for their morning wash. All scrubbed off except the new man.

"Joe," said the boss, "aren't you going to wash up this morning?"

"Shucks!" was the reply, "It don't make me dirty to sleep."

Kid—How did you get the red marks on your nose, Uncle?

Uncle—Glasses, my boy.

Kid—Glasses of what?

Nervous Passenger—My! Oh my! Isn't the train going at a fearful rate?

Old Lady (consolingly)—Yes, deedy. My boy Jimmie is engineer on this train, and he certainly can make her spin when he gets a drop too much in him.

Proof.

It was the rush hour in the cafeteria, one of those quick lunch places where you help yourself and grab a chair and use the arm of the chair as a table. A rushed feeder grabbed a slice of pie and copped out a chair. Then he remembered that he needed coffee, and he dashed over to the service counter. When he returned with his coffee his chair was occupied by another hurryup diner.

"Excuse me," said the first man, "but that is my chair."

"How do you know it is your chair?" demanded the occupant in a surly tone.

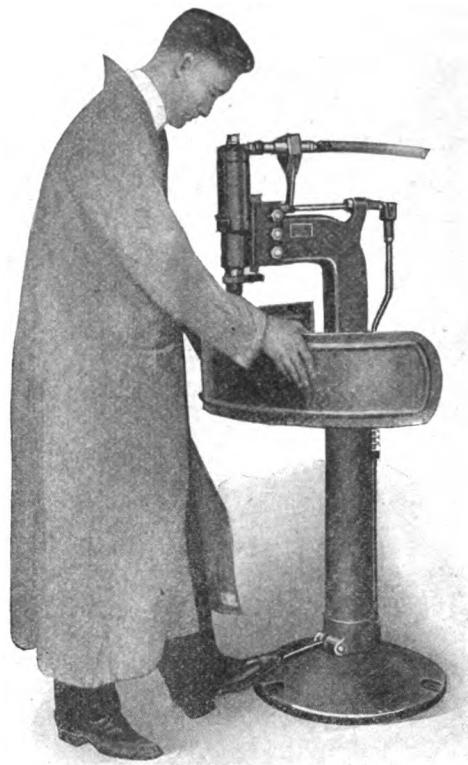
"Because I can prove it," stated the first man.

"How can you prove it," asked the occupant.

"By the seat of your pants," was the reply. "Your are sitting on my pie!"—Exchange.

"Here, cabby; you haven't given me enough change."

"Well, Mister, ye can't expect to hire a hoss an' kerridge an' a expert accountant for fifty cents a mile."



The Boyer Pedestal Riveter.

The Boyer Pedestal Riveter is designed for riveting small light parts that can best be handled in a stationary machine, and is constructed so that the machine can be operated by a foot lever, leaving the operator's hands free to handle the work.

The yoke consists of a crucible steel frame mounted in the end of pipe column, all of which is supported on a cast iron base and held together with a $\frac{3}{4}$ " bolt in a substantial manner. The base is provided with anchor bolt holes to permit its being securely fastened to the floor. The standard yoke has a gap of 8" and a reach of 11". At a slight additional cost yokes may be furnished of any desired dimensions to accommodate larger work.

Where it is desirable to handle more than one size rivet a special dolly may be supplied that will accommodate four

different size rivets. This dolly is made to permit of its being used in very close corners, and it can be replaced at very reasonable cost when worn out.

The riveter head is a standard Boyer riveter $1\frac{1}{8} \times 3$, $1\frac{1}{8} \times 4$ or $1\frac{1}{8} \times 5$ and is held in a clamp which permits of its being adjusted to take care of the wear on the dies or the variation in length of rivets.

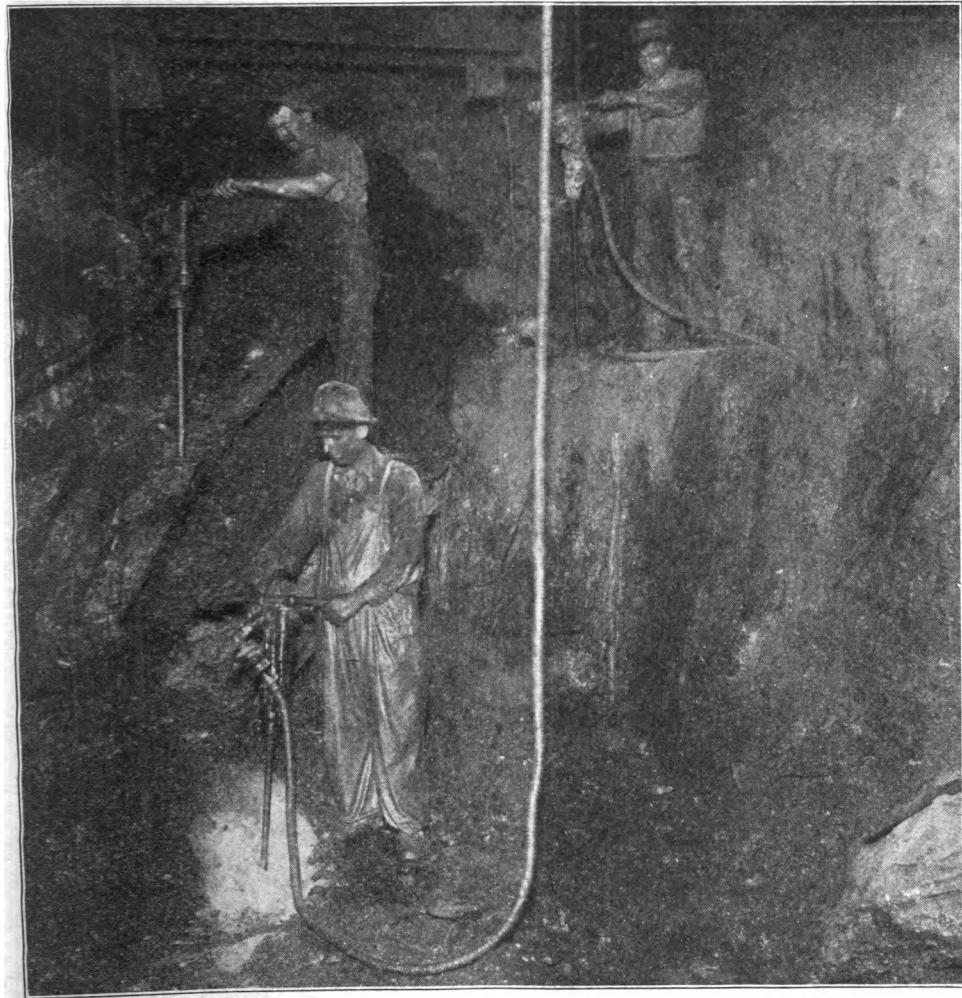
The net weight of this machine when equipped with $1\frac{1}{8} \times 3$ riveter is approximately 173 pounds.

Prices and further information upon request.

Remarkable Drilling Records.

Some interesting tests of Hummer Drills were made a few days ago in the igneous mica rock which is being excavated at the corner of East 149th Street and Eagle Avenue in the Bronx, New York.

The first test was made with a Type A 66 Little Hummer, using $\frac{7}{8}$ in. hexagonal



The U. S. Realty and Improvement Co. is using B-66 Hummer Drills in the New York Subway. The above scene shows three of them in use underground at 32nd St. and Broadway.

hollow steel, collared drill, with the following result:

20-inch hole, in 2 minutes 7 seconds;

Starter, $1\frac{3}{4}$ in.

16-inch hole, in 1 minute 30 seconds;

second drill, $1\frac{5}{8}$ in.

Total—36-inch hole, 3 minutes 37 seconds.

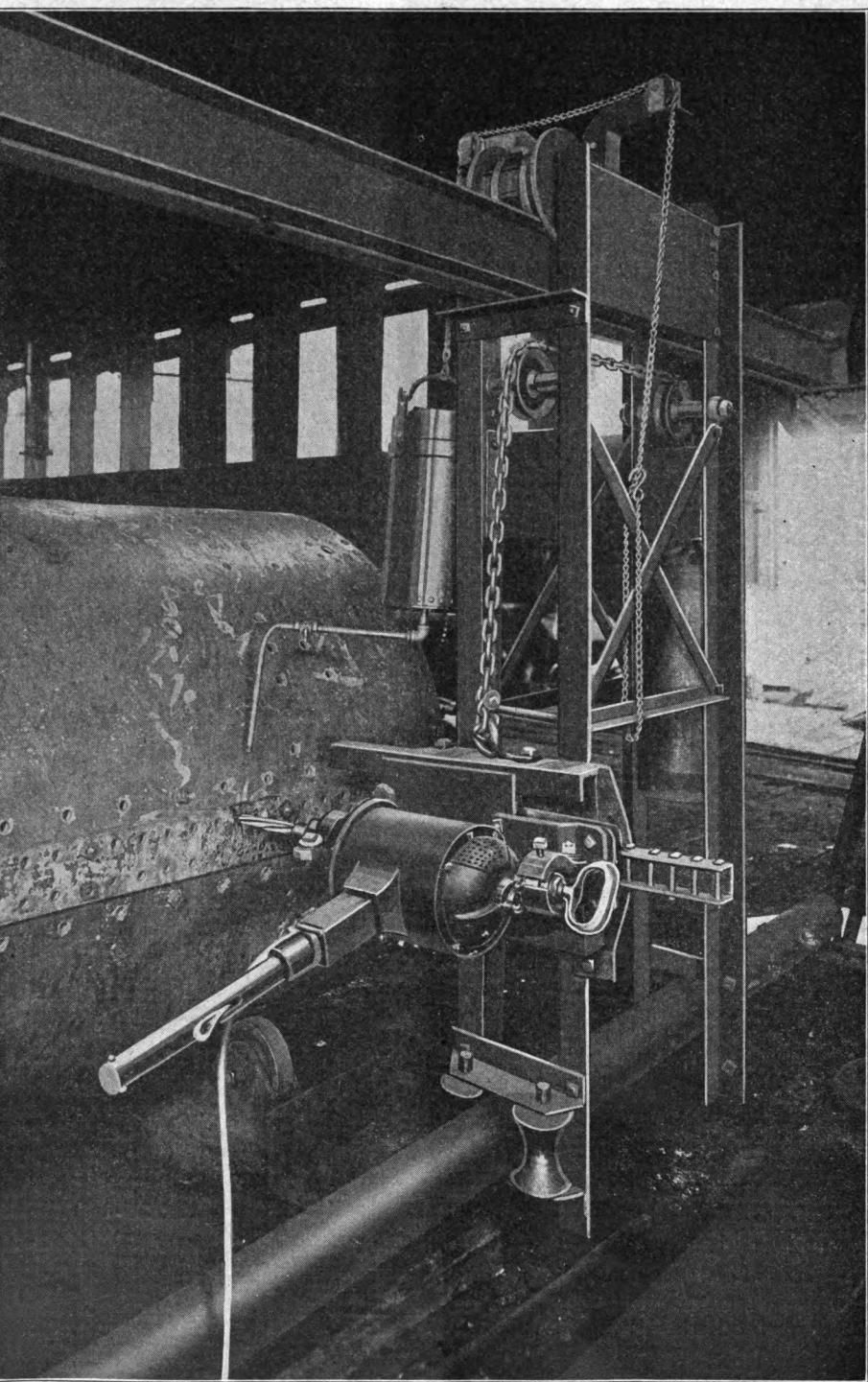
The second test was made with a Type C 66 Big Hummer, using $1\frac{1}{8}$ hexagon hollow steel, collarless drill, with the following result:

	Length of Drill	Kind of Bit	Depth Drilled	Time Occ'd.
Starter ...	2'6"	* $2\frac{3}{4}$ "	24"	2'10"
Second ...	4'6"	†2"	26"	2'15"
Third	7'	† $1\frac{7}{8}$ "	34"	3'10"
Fourth ...	10'	† $1\frac{3}{4}$ "	36"	4'
Total—120 in.....			11 min. 35 sec.	

If you are interested in Hummer Drills, send for Bulletin 216 and ask for quotations.

*Rose.

†Cross.



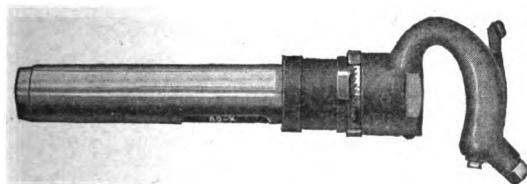
Device for Reaming Holes in Boiler Shells with Duntley Electric Drill

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LOGICAL CONSTRUCTION

Is a Feature of

Boyer Pneumatic Hammers



No. 80X BOYER RIVETING HAMMER
Capacity, 1½ in. Length over all, only 21½ in.

BOYER HAMMERS are made in three parts — cylinder, handle and valve — a construction which facilitates examination, cleaning and repairs, and extends the life of the tool indefinitely.

Write for Hammer Bulletin No. 124

Chicago Pneumatic Tool Company

1014 Fisher Building, Chicago 52 Vanderbilt Ave., New York City
BRANCHES EVERYWHERE

A Device for Reaming Holes in Boiler Shells.

Reaming holes in boiler shells with the ordinary air or electric drill is a very tiresome operation; it is also very hard to hold the reamer squarely against the shell. When the men doing the work get tired they generally let the drill drop down making the holes oblong.

Mr. E. A. Anderson, superintendent of the boiler department of Kroeschell Bros. of Chicago, has designed a simple frame for holding air or electric drills rigidly in the proper position for reaming, and is using a No. 4 Duntley electric drill which has proven to be the best tool for the purpose. Most of the reaming is from 11/16 to 15/16 in. dia. and about 1½ in. thickness.

As may be seen from the photo the frame holding the motor can be adjusted to different angles and can also be moved up and down, a counterweight balancing the weight of the motor. It is made high enough to take in shells from 30" to 96" in dia. and long enough to take in

a seam 10 feet long without moving the shell.

It is also provided with a tank for holding soapwater and a pan below for catching same so it can be used over again.

The frame is made rigid enough so it can be used as a drill-press. A screw-feed is then put on instead of the lever feed that is used when reaming. It can be put up between two posts almost anywhere in a shop and if necessary can be moved with very little trouble.

Those interested in electric tools should get these bulletins, which may be obtained upon request at any of the offices of the Chicago Pneumatic Tool Co.:

- E-31—Duntley Electric Drilling Stands.
- E-33—Heavy Duty Electric Drills, Direct Current.
- E-35—Duntley Universal Electric Drills.
- E-38—Duntley Electric Hammer Drill.
- E-39—Duntley Electric Grinders.
- E-40—Electric Hoists.
- E-41—Duntley Track Drills.



Envy is an awkward homage that inferiority pays to merit.

Some men make the best time when headed the wrong way.

Always try to keep your heart a little softer than your head.

Yesterday has passed, tomorrow may never come; act today.

That which is done in a second is often regretted for a lifetime.

If we got everything we wanted we wouldn't want half so much.

Tomorrow is the soft bed of ease on which the weak lie down to rest.

Did you ever observe how the self-made man worships his creator?

Even the devil don't put off until tomorrow the things he can do today.

Having the key to success is of very little use unless you can find the key hole.

The good work you did yesterday is only a sample of that which you can do today.

It is not very exciting for a girl to marry the fellow none of the other girls wanted.

One way to make a woman happy is to sit and listen to her talk herself into a trance.

A great many people spend their time talking and call it a fighting principle.

Second thoughts are also best, because they are usually the least expensive.

Lots of people hand themselves bouquets who would never get them otherwise.

When a woman loses her husband's love some other woman generally finds it.

Opportunity does not only do great work, but if not heeded is often disastrous.

If the earth were covered with flowers all the year round the bees would get lazy.

Did you ever notice how things that are none of your business will interest you?

Education will broaden a narrow man, but there is no known cure for a big head.

When a fellow "takes the starch out" of his girl she generally wilts in his arms.

Success is made not by lying awake at night, but by keeping wide awake in the daytime.

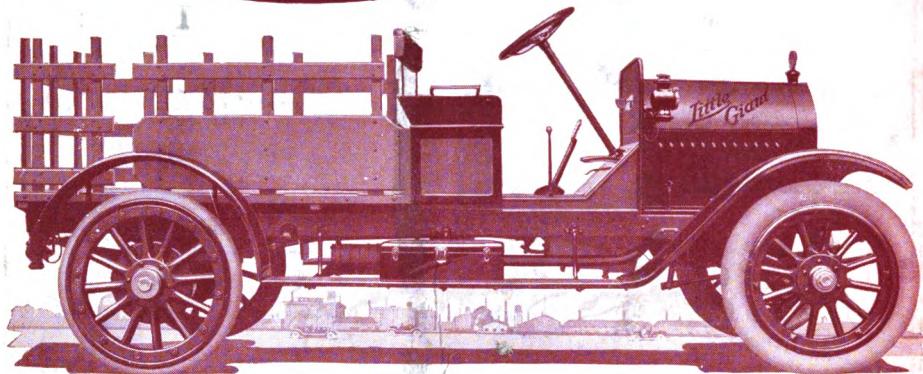
When mean things are said about you, if they are true, amend; if they are not true, it is not a bad idea to amend a little, anyway.

The Chicago Pneumatic Tool Co.

MANUFACTURERS OF THE FOLLOWING
PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Grinders, Portable Electric
Air Compressors	Hammer Drills, Electric
Air Economizers	Hammer Drills, Pneumatic
Air Forge, Chicago	Hammers, Riveting
Air Motors	Hammers, Chipping and Calking
Air Receivers	Hammers, Stone
Air Jacks	Hoists, Duntley Electric
Air Lifts	Hoists, Pneumatic Geared
Airoilene Oil	Hoists, Straight Lift
Airoilene Grease	Holders-on
Angle Gears, Little Giant	Hose, Special High Grade
Angle Gears, Boyer	Hose Clamp Tool
Annealing Machines	Hose Couplings (Univ'sal)
Armour Scaling Machines	Inter-Coolers
Automatic Oiling Devices	Oil Driven Compressors
Bell Ringers, Little Giant	Oil Engines
Blow-off Cocks, Little Giant	Painting Machines
Chucks, Drill	Pipe Bending Machines
Chucks, Expanding	Pneumatic Saws
Commercial Car	Pneumatic Plate Stra't'ners
Drift Bolt Drivers	Railway Motor Section Cars
Drills, Boyer	Reamers
Drills, Keller	Reheaters
Drills, Little Giant	Rivet Busters
Drills, Rock	Riveters, Jamb
Drilling Stands	Riveters, Yoke
Elevators	Riveters, Compression
Electric Drills, Duntley	Sand Rammers
Electric Grinders, Duntley	Sand Sifters
Engineers' Valves	Speed Recorders
Flue Cutters, Chicago	Staybolt Chucks
Flue Rollers and Ex- panders, Little Giant	Stone Dressers
Gas Engines	Staybolt Nippers
Gasoline Driven Com- pressors	Vacuum Pumps
Gasoline Engines	Water Lifts
	Winches, Portable

"Little Giant"



A Whale of a 1-ton Truck

Chicago Pneumatic Tool Company's Master Product

The "Little Giant" Line Includes

Model 15—1-Ton Worm Drive
Model H—1½-Ton Chain Drive

Model H—1-Ton Chain Drive
Model 16—2-Ton Worm Drive

THE LITTLE GIANT stands supreme not merely because part by part it represents units that have proved most enduring in the test of time, but because of individuality—genuine distinction—perfect unity of every factor that makes for truck supremacy.

Our business reputation is at stake on Little Giant Service. We stand back of Little Giant because we know what it will do for your business, whether your loads are heavy or light—your hauling distance long or short. Let us put the facts before you and give you a satisfying demonstration of Little Giant quality and Little Giant service.

Chicago Pneumatic Tool Co.

LITTLE GIANT BUILDING, 1615 MICHIGAN AVENUE, CHICAGO

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Eastern Office, No. 52 Vanderbilt Ave.
NEW YORK

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CINCINNATI: 1008 Mercantile Lib. Bldg.
CLEVELAND: 1241 E. 49th St.
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SALT LAKE CITY: 117-19 W. 2nd So. St.
SEATTLE: 122 King St.
ST. LOUIS: 813-19 Hempstead St.
ST. PAUL: Pioneer Bldg.

FOREIGN

Canada: { Montreal, Canadian Pneumatic Tool Co.
The Holden Co., Ltd., Montreal, Toronto, Winnipeg.

British Columbia: Vancouver, Holden Co., Ltd., 542 Pendar Street, West.
Mexico: Mexico City, The General Supply Co., Av. Isabel La Catolica, No. 51.

Northern Mexico: (Sonora and Chihuahua), Don A. Carpenter & Co., El Paso, Texas.

Great Britain: { London, The Consolidated Pneumatic Tool Company,
Spain: { London, The Consolidated Pneumatic Tool Company,
Portugal: { Ltd., 9, Bridge Street, Westminster, S. W.

France: Paris, Anciens Etablissement, Glaenzer & Perreau, 18-20 Faubourg du Temple.

Belgium: Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Italy: Milan, The Consolidated Pneumatic Tool Co., Ltd., via A. Capellini 7.

Germany:

Austria Hungary:

Balkan States:

Norway:

Sweden:

Holland:

Switzerland:

Denmark:

Russia: Petrograd; Phoenix Engineering Works Co., Ltd., Polustrovskaya. Quay No. 39.

India: Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.

Japanese Empire: Tokyo, Osaka, Seoul, Dairen, The F. W. Horne Co.

Philippine Islands: Manila, Frank L. Strong Mach. Co., 64-68 Calle Echague.

Australia: Sydney, Henry W. Peabody & Co.

New Zealand: Wellington, Henry W. Peabody & Co.

South America: { General Sales Agents, International Railway Supply

Central America: { Co., 149 Broadway, N. Y.

South America: Buenos Aires, Argentina, Evans, Thornton & Co.

South Africa: { Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 100 Main Street.

Alaska: Cordova, The Harmon Machinery Co.

Cuba, Havana: J. F. Berndes & Co., Box 349.

Hawaiian Islands, Honolulu: H. S. Gray & Co., 832 Fort St.

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BULLETIN DIRECTORY

Requests for these Bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

PNEUMATIC TOOLS

- 121...Pneumatic Rammers and Foundry Appliances.
- 124...Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128...Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129...Hose, Hose Couplings and Hose Clamp Tools.
- 130...Lubrication of Pneumatic Tools.
- 132...Pneumatic Motors and Pneumatic Geared Hoists.
- 133...Cylinder Air Hoists and Jacks.

ELECTRIC TOOLS

- E-39..Duntley Electric Grinders.
- E-41..Duntley Electric Tools for Street and Interurban Railways.
- E-42..Universal Electric Drills.
- E-43..Duntley Universal Electric Hammer Drill.
- E-44..Duntley Electric Sensitive Drilling Stand.
- E-45..Duntley Portable Electric Hoists.
- 233..Duntley Electric Tool Booklet.

AIR COMPRESSORS AND FUEL OIL ENGINES

- 34-A..Class "G" Steam Driven "Chicago Pneumatic" Compressors.
- 34-C.."Chicago Pneumatic" Gasoline and Fuel Oil Engine Driven Compressors.
- 34-E..Instructions for Installing and Operating Giant Gas Engines.
- 34-F..Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G..Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H..General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I..Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J..Instructions for Installing and Operating Class O Compressors.

- 34-K..Class N-SO and N-SG Fuel Oil and Gas Driven Compressors.
- 34-L..General Pneumatic Engineering Information.
- 34-M..Class "O" "Chicago Pneumatic" Steam and Power Driven Compressors.
- 34-N..Class N-SS and N-SB Single Enclosed Compressors.
- 34-O..Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-Q..Giant A-O Fuel Oil Engine Applications.
- 34-S..Small Power Driven Compressors.
- 34-U..Instructions for Installing and Operating Class N-SO Fuel Oil Compressors.
- 34-V..Instructions for Installing and Operating Giant Fuel Oil Engines.
- 34-W..Class A-O Fuel Oil Engines.
- 34-X..Class A-G Gas and Gasoline Engines.
- 34-Y..Class N-SG Gas and Gasoline Driven Compressors.
- 34-Z..Class N-SS Automatic Steam Driven Compressors.
- 213...Simplate Flat Disc Valves.
- 224...Compressor Booklet.
- 281...Giant Fuel Oil Gas and Gasoline Engine Application Folder.

ROCK DRILLS AND HAND DRILLS

- 148..Chicago Valveless Hand Drills.
- 149..Chicago Portable Mine Hoist.
- 150..Chicago Coal Drills.
- 151..Chicago Slogger Rock Drills.
- 152..Chicago Gatling Drills.
- 153..Chicago Sinker.
- 154..Chicago Stopper.
- 172..Chicago Plug and Feather Drill.
- 192..Stone Tools, etc.
- 216..Hummer Hammer Drills.

LITTLE GIANT TRUCK

Catalogue No. 285.

ROCKFORD and MISCELLANEOUS

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- 117..Lubrication of Rockford Cars.
- 119..Operation of Rockford Cars.
- 251..Chicago Pneumatic Water Lift Pump.

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg., CHICAGO Branches Everywhere 52 Vanderbilt Ave., NEW YORK

CONVENTIONS.

March 19-22, 1917—National Railway Appliances Association, at the Coliseum, Chicago, Ill.

March 20-22, 1917—American Railway Engineering Association, Chicago, Ill.

May 1-4, 1917—The Air Brake Association, at Hotel Chisca, Memphis, Tenn.

May 7-11, 1917—American Waterworks Association, at Richmond, Va.

May 14-16, 1917—National Association of Manufacturers, at the Waldorf Astoria Hotel, New York City, N. Y.

May 14-17, 1917—International Railway Fuel Association, at the Hotel Sherman, Chicago, Ill.

May 21-22-23, 1917—Railway Storekeepers' Association, at the Hotel Sherman, Chicago, Ill.

May 22-25, 1917—The American Society of Mechanical Engineers, Cincinnati, Ohio.

May 22-25, 1917—Master Boiler Makers' Association, at the Hotel Jefferson, Richmond, Va.

May 22-27, 1917—Boiler Makers Supply Men's Association, at the Hotel Jefferson, Richmond, Va.

June 13-20, 1917—American Railway Master Mechanics' Association, at Young's Million Dollar Pier, Atlantic City, N. J.

June 13-20, 1917—Master Car Builders' Association, at Young's Million Dollar Pier, Atlantic City, N. J.

June 13-20, 1917—Railway Supply Manufacturers' Association, at Young's Million Dollar Pier, Atlantic City, N. J.

June 25, 1917—American Institute of Electrical Engineers, at the Homestead Hotel, Hot Springs, Va.

June 25-26, 1917—The American Boiler Manufacturers' Association, at the William Penn Hotel, Pittsburgh, Pa.

August 5-11, 1917—Universal Craftsman Council of Engineers, at Toledo, Ohio.

August 8-10, 1917—The American Association of Railroad Superintendents, at Minneapolis, Minn.

August 21-23, 1917—International Railroad Master Blacksmiths' Association, at Chicago, Ill.

August 30—September 1, 1917—American Railway Tool Foremen's Association, at Hotel Sherman, Chicago, Ill.

September 4-7, 1917—International Railway General Foremen's Association, at Hotel Sherman, Chicago, Ill.

September 10-15, 1917—National Association of Stationary Engineers, Evansville, Ind.

September, 1917—The Traveling Engineers' Association, Chicago, Illinois.

September 10-15, 1917—International Union of Steam & Operating Engineers, Cleveland, Ohio.

September 18-21, 1917—Roadmasters and Maintenance of Way Association of America, at Hotel Auditorium, Chicago, Ill.

September 24, 1917—American Institute of Metals, at Boston, Mass.

September 24, 1917—American Foundrymen's Association, at Boston, Mass.

October 16-18, 1917—Maintenance of Way Master Painters' Association of United States and Canada, Cleveland, Ohio.

October 16-18, 1917—American Railway Bridge and Building Association, at St. Paul, Minn.

ENGINEERING SOCIETIES, ETC.

American Association of Railroad Superintendents (General)—General Secretary, E. H. Harman, St. Louis, Mo.

American Electro-Platers Society—President, H. H. Williams, St. Louis, Mo.; Secretary-Treasurer, Walter Fraine, 607 Grand Avenue, Dayton, Ohio.

American Highway Association, Colorado Bldg., Washington, D. C.

American Institute of Electrical Engineers—President, H. W. Buck, 49 Wall St., New York; Secretary, F. L. Hutchinson, 33 W. 39th St., New York.

American Institute of Mining Engineers—Secretary, Bradley Stoughton, 29 W. 39th St., New York City.

American Mining Congress—Secretary, J. F. Callbreath, Jr., 743 Munsey Bldg., Washington, D. C.

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American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, South Ferry Bldg., New York City. Meetings: Second Thursday, every month.

American Society of Heating and Ventilating Engineers—Secretary, C. W. Obert, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N. Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Railway Electrical Engineers—Secretary, J. A. Andreuccetti, C. & N. W. Ry. Co., Chicago, Ill.

Boston Society of Civil Engineers—Secretary, S. Everett Tinkham, 715 Tremont Temple, Boston, Mass.

Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, Ed. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, C. E. Drayer, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, Clarence Blakeslee, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, B. V. Williamson, 1800 David Whitney Bldg., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 928 Stahlman Bldg., Nashville, Tenn.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, R. H. Fernald, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St., W. Lafayette, Ind.

Engineering Society of Buffalo—President, John Younger; Secretary, W. J. Gamble, 247 Rano St., Buffalo, N. Y.

Engineers' Society of Pennsylvania—Secretary, E. R. Dasher, 31 S. Front St., Harrisburg, Pa.

Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers—Secretary, E. E. R. Tratman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Grossman, Indianapolis, Ind.

International Railway Congress Association—President (of the International Commission), W. Toudeller, 11 Rue de Louvain, Brussels, Belgium; Secretary, General L. Weissenbruch, same address.

Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.

Louisiana Engineering Society—President, Samuel Young; Secretary, W. T. Hogg, P. O. Sta. 20, New Orleans, La.

Michigan Engineering Society—President, Geo. W. Bissell, East Lansing, Mich.; Secretary, Samuel J. Hoexter, Kalamazoo, Mich.

Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

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New England R. R. Club—Secretary, W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass.

New York Railroad Club, Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.

Ohio Engineering Society—President, Clyde T. Morris, O. S. U., Columbus, Ohio; Secretary, Jno. Laylin, Norwalk, Ohio.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.

Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.

Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.

Rochester Engineering Society—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave. North, Rochester, N. Y.

St. Louis Railway Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.

Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, Hugh C. Ellis, Capitol Bldg., Salt Lake City, Utah. Third Wednesday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Montpelier, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, B. E. Grant, 207 City Hall, Chicago; Secretary, E. N. Layfield, 1735 Monadnock Blk., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nellis, 3014, 165 Broadway, New York, N. Y.

American Boiler Manufacturers' Association—President, M. H. Broderick, Muncie, Ind.; Secretary, H. N. Covell, Lidgerwood Mfg. Co., Dikemay St., Brooklyn, N. Y.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York City.

American Electric Railway Manufacturers' Association—Secretary, Fred C. J. Dell, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, J. E. Fairbanks, 75 Church St., New York City.

American Railway Bridge and Building Association—President, C. E. Smith, 2078 Railway Exchange, St. Louis, Mo.; Secretary-Treasurer, C. A. Lichy, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, Wm. Schlafge, G. M. S., Erie R. R., New York, N. Y.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, R. D. Fletcher, Belt Railway of Chicago.

American Road Builders' Association—Secretary, E. L. Powers, 160 Nassau St., New York.

Boiler Makers' Supply Men's Association—Secretary, Geo. Slatte, The Boiler Maker, 461 Eighth Ave., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

Car Foremen's Association of Chicago—President, A. La Mar, Master Mechanic, Penn. R. R., Chicago, Ill.; Secretary, Aaron Kline, 841 N. Lawler Ave., Chicago.

General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, Ohio.

International Railway Fuel Association—Secretary-Treasurer, J. G. Crawford, 702 E. 51st St., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1061 N. Wabash, Winona, Minn.

International Union of Steam and Operating Engineers—President, Milton Snellings; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, D. A. Lucas, G. F. B. M., C. B. & Q. R. R., Havrelock, Nebr.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, C. E. Chambers, I. M. P., C. R. R. of N. J., Jersey City, N. J.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

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National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

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Universal Craftsman Council of Engineers—Secretary, Thos. H. Jones, Cherrydale, Alexandria County, Va.

A Safe Resolution.

She—"When we are married I will never see you coming home at 2 in the morning, will I?"

He—"Not if you are a heavy sleeper, dear."

No. 807

No. 930

The "Paragon" High Speed Drill

Holds the World's Drilling Record—IT'S RESULTS THAT COUNT

Just give "Paragon" Drills a Test—They'll convince you.

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High Grade Rubber Goods
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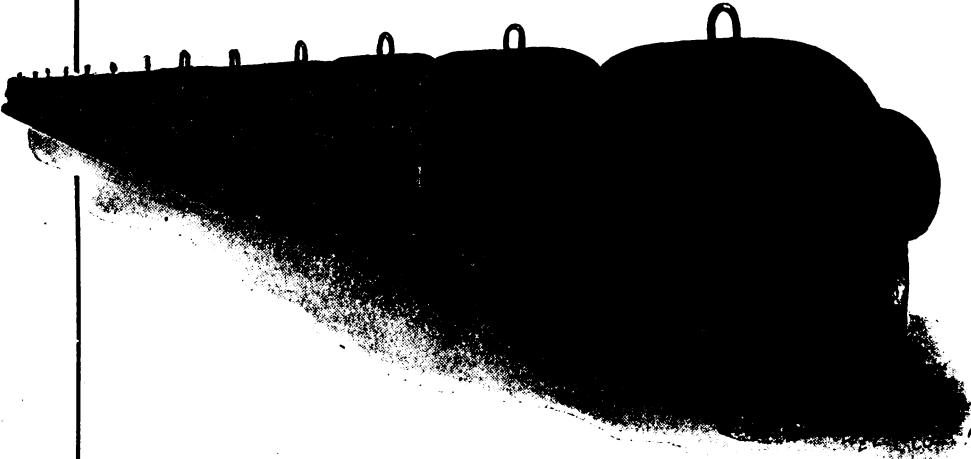
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BURKE ELECTRIC COMPANY, ERIE, PENNA.

SALES OFFICES IN PRINCIPAL CITIES

Motors for all purposes where reliable power is essential

ALL SIZES

ALL SPEEDS

ALL VOLTAGES

2 AND 3 PHASE ALTERNATING AND DIRECT CURRENT

IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XII

MARCH, 1917

No. 4

TRUCK MAKERS ARE OPTIMISTIC

An Interview With

W. O. Duntley, President Chicago Pneumatic Tool Co.

"The manufacturer of motor trucks has many reasons for feeling optimistic over the future of his business. The well known makers have recently closed the most prosperous year of their history, and many of them have been far oversold.

"This has been due to the heavy volume of business which has speeded up industry all along the line.

"To keep pace with the growing demand we have greatly increased the capacity of our Chicago Heights factory, the 'Home of the Little Giant,' and have been able to contract for delivery of a generous amount of material for the coming twelve months.

"While the price of horses has steadily increased, the cost of motor trucks, despite the greatly increased costs of labor and raw material, has shown no appreciable rise. This is due to the fact that production has greatly increased, resulting in reduced overhead.

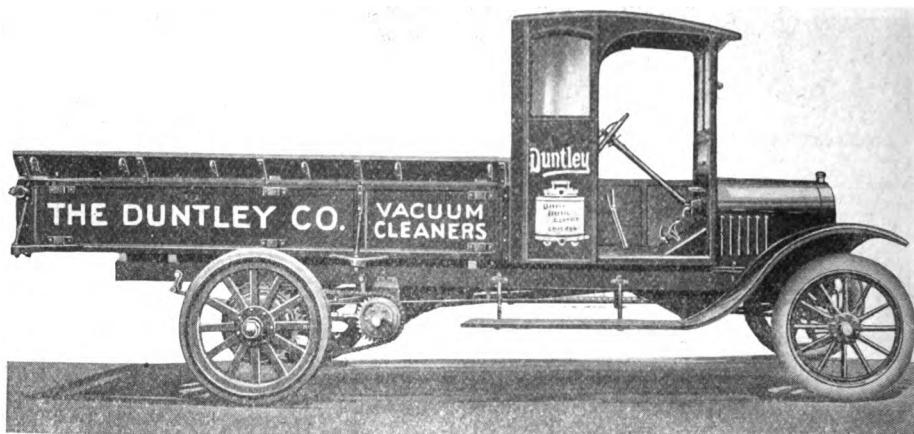
"It is now, therefore, actually cheaper to install a motor truck delivery system than a horse and wagon delivery system. Therefore, firms installing delivery systems for the first time are invariably installing motor trucks, while firms which now use horses and wagons recognize that motor trucks are vastly more eco-

nomical to operate, more durable and less troublesome, and are making the change to motor trucks as rapidly as their finances permit.

"Another cause for optimism on the part of the industry is the tremendous increase in the good roads movement. State after State has made huge appropriations for road improvements, and the public en masse is demanding good roads. Every time a rural road is improved to a market center it makes a host of farmer motor truck prospects. The time is not far off when every farmer will consider a motor truck as necessary a part of his equipment as a plow.

"Good roads also mean that the business men in towns and cities will extend their delivery systems into the surrounding country, and motor trucks are not only more economical for rural delivery but they offer the only means by which long routes can be covered.

"Firms which have hauling to do are, of course, anxious to get this done as efficiently and economically as possible. This not only means that they must install motor trucks but the large haulers must install various sizes of trucks for various classes of work. A large packer should have a heavy 3½- or 5-ton truck for hauling to and from the freight de-



Little Giant Convert-A Car. By means of the Little Giant Convert-A-Car attachment any Ford car can be easily converted into a one-ton truck. It can be re-converted into a Ford car without delay or difficulty. Prices and details upon request.

pots and then he should have a 1-ton truck for local delivery work, etc. The fact that such conditions exist, and that many concerns prefer to buy their entire line of trucks from one manufacturer has influenced us to build a complete line of trucks. Another influence was the incessant cry from our dealers for a line of models, and the plausible claim that they could make much more money by handling a complete line. As far as heavier trucks are concerned, many old customers who have bought air tools and compressors from us for years, have demanded heavier trucks than we have until now been able to supply. In view of these considerations we have added the Little Giant Convert-a-Car (converts a Ford into a 1-ton truck); the Model 17, 3½-ton worm drive, and the Model 18, 5-ton worm or chain drive. The Model 18 is built on orders only and will not be carried in stock.

A Simple Request.

Murderer—"Is this the guy who is to defend me?"

Judge—"Yes; he's your lawyer."

Murderer—"If he should die could I have another?"

Judge—"Yes."

Murderer—"Can I see him alone for a few minutes?"

SPECIFICATIONS "LITTLE GIANT" CONVERT-A-CAR.

Axle.— $2\frac{1}{2} \times 2\frac{1}{2}$ Rectangular section solid forged high grade carbon steel.

Bearings.—Roller Bearings.

Brakes.— $12 \times 2\frac{1}{2}$ Internal expanding, lined with raybestos.

Springs.—Semi-elliptic $42 \times 2\frac{1}{4}$ shackle links at both ends. Auxiliary cross spring mounted on heavy structural steel, tee cross member arranged to bear on axle when loaded sufficiently.

Sprockets.—Interchangeable cut steel sprockets to take standard makes of roller chains, 1" pitch $\frac{5}{8} \times \frac{5}{8}$ roller.

Brake Drums.—Diameter— $12 \times 2\frac{1}{2}$ brake surface, bolted to rear hubs.

Radius Rods.—Substantial radius rod, easily adjustable for proper chain tension, and allowing free action to compensate for uneven road surface.

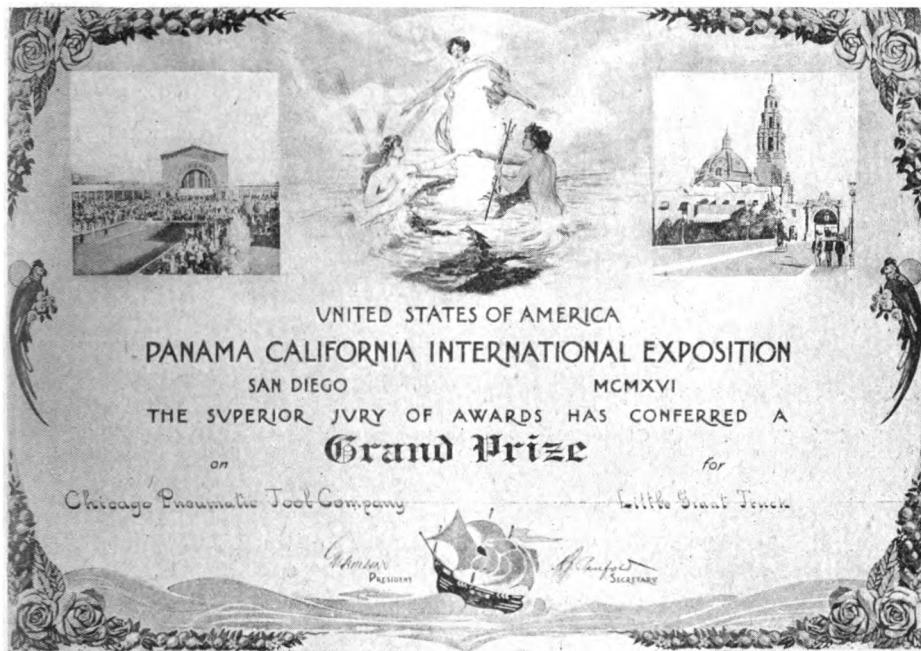
Drive.—Double chain, 1" pitch, $\frac{5}{8} \times \frac{5}{8}$ roller, easily removed for cleaning.

Wheels.— $34 \times 3\frac{1}{2}$ heavy artillery, second growth hickory twelve 2×2 rectangular spokes.

Tires.—Pressed on or demountable $34 \times 3\frac{1}{2}$ solid.

Speed.—Between 12 and 20 miles per hour.

Load Distribution.—Chassis, approximately 50% on rear axle, full load, ap-



The Panama California International Exposition has conferred a Grand Prize on the Little Giant Motor Truck. As there was a great deal of rivalry among motor truck manufacturers for this award the Chicago Pneumatic Tool Company has just cause for pride in the new honor brought to it by the Little Giant.

proximately 90% on rear axle.

Loading Space.—108" length of frame in rear of cab top 99".

Wheel Base.—125".

Carrying Capacity.—Total permissible load on chassis, including body, 2,800 lbs.

Weight.—Including Ford chassis and without body, 2,100 lbs.

Repairs.—Interchangeable repair parts furnished at reasonable prices.

Frame.—4"x5 $\frac{1}{4}$ lbs. structural steel channel, length 168 inches, width 32 inches. This unit telescopes the Ford frame, to which it is rigidly attached at front, sides and rear. The rear axle of the Ford is transformed into a jackshaft merely by removing the wheels and replacing them with the sprockets. The axle is then supported from the steel channel frame in substantial hangers, and the chains are applied, transmitting

the drive to the rear wheels. The axle is not cut nor damaged in any way and the outfit can readily be converted into a pleasure car again, by reversing the process of assembly.

SPECIFICATIONS "LITTLE GIANT" MODEL 17-3 $\frac{1}{2}$ TON TRUCK.

Axles.—Timken—Front axle I beam section 2 $\frac{1}{4}$ x3 $\frac{1}{2}$ in. solid center, thrust bearing on knuckle; rear axle, worm driven, ratio, 10 $\frac{1}{3}$:1; drive axle full floating, 2" diameter.

Bearings.—Ball and roller bearings except engine.

Brakes.—Hand brake and foot brake, internal duplex on 21" brake drum on rear wheel. Both brakes equalized.

Carburetor.—Schebler Type R, size 1 $\frac{1}{2}$ ". Air and gasoline adjustment on dash.

Chassis Dimensions.—Length of chassis



Model 17—3½-ton Little Giant Truck. A new big brother in the Little Giant family. The demand of our patrons for a heavy truck has induced us to build this dreadnaught of motor trucks. Price upon request.

over all, including bumper, 280". Length of frame back of driver's seat, 180". Wheel base 176". Over-all width of chassis outside of fenders, 73". Height of frame from ground, loaded, 34".

Control.—Left hand steer and center control.

Control Engine.—Hand throttle and foot accelerator.

Cooling.—Tubular radiator mounted on springs, gear driven centrifugal pump, belt driven and adjustable fan.

Clutch.—Dry plates, multiple disc type.

Engine.—Continental 4½" bore, 5½" stroke, cylinders in pairs, S. A. E. rating 32—4 H. P. This motor will develop 45 H. P. at approximately 1,500 R. P. M.; 3 point suspension, unit power plant.

Frame.—Structural steel channel section $\frac{5}{8}$ " thick, 8" deep, 2 $\frac{3}{8}$ " at top and bottom; width of frame, 36".

Gasoline Capacity.—Twenty gallons, tank located under seat; gravity feed.

Ignition.—High tension magneto.

Oiling.—Combination force and splash system. The force feed is operated by a vertical plunger pump driven from cam shaft. Capacity of oil, one gallon. Gauge shows supply at all times.

Load.—Total admissible load on chassis including body, 9,000 pounds. Rated

capacity of truck, 7,000 pounds. Chassis weight, 6,200 pounds.

Percentage of chassis weight on rear tires, 40%.

Percentage of chassis body and load on rear tires, 70%.

Percentage of load, including body, on rear tires, 90%.

Speed.—12 miles per hour at 1,100 R. P. M. motor speed. Total reduction on 4th speed, 10½:1; on 3d speed, 18.49:1; on 2d speed, 32.64:1; on 1st speed, 51.54:1; on reverse, 59.70:1.

Springs.—Semi-elliptic; 3x44 front, 4x60 inches rear.

Steering Gear.—Screw and nut type, irreversible.

Tires (Pressed on or demountable).—Solid 38x5 single in front, 38x5 dual in rear.

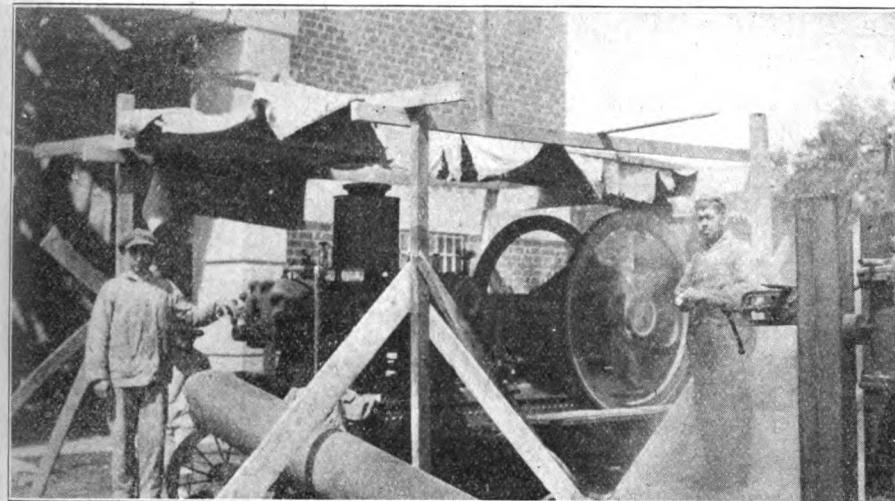
Transmission.—Selective type sliding gear, direct on 4th speed, four forward and one reverse. Ratio on 4th speed, 1:1; on 3d speed, 1.79:1; on 2d speed, 3.16:1; on 1st speed, 4.99:1; on reverse, 5.78:1.

Tread.—66½" front, 65¼" rear.

Water Capacity.—Nine gallons.

Wheels.—Artillery type, 2½" rectangular spokes in front, 3" rectangular spokes in rear, S. A. E. band.

Chassis Equipment.—Includes the running gear, tires, driver's seat, cab, dash



On the job. A familiar scene wherever compressed air is used in construction work. Michael Staub, Ashokan, New York, is an enthusiastic user of Chicago Pneumatic Portable Fuel Oil Compressors.

and foot boards, front mud guards, side and tail oil lamps, mechanical horn, metal tool box on running board, and full set of tools.

A Satisfied Contractor.

"In reference to the 'Chicago Pneumatic' Type N-S0, Single, Fuel Driven Air Compressor purchased of you in March, 1915, I desire to say that this machine has come up to all expectations. It is being operated daily in connection with my cement gun, and never has the gun-man complained of lack of air or insufficient pressure, although this air is piped to the gun a distance of over 650 feet. This machine has also been successfully used in connection with the erection of steel on the Superstructures at the Ashokan Reservoir, now in the course of construction. The pressure used for this operation was from 90 to 100 pounds.

"From the standpoint of fuel consumption, it is really without par for economical running, consuming an average of from 16 to 20 gallons of fuel oil per day's run.

"In closing, wish to state that my satisfaction with this machine is complete, and if my future needs require the services of another compressor, it shall certainly be a fuel oil compressor.

"Yours very truly,
MICHAEL STAUB,"
Ashokan, N. Y.

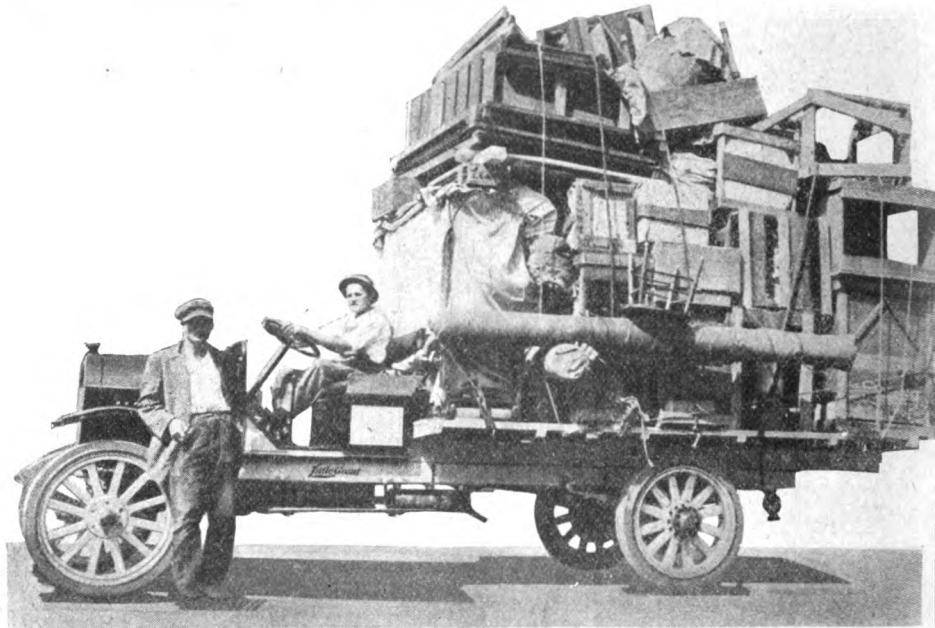
Head Work.

"Maria, you'll never be able to drive that nail with a flat-iron. For heaven's sakes use your head," admonished Mr. Stubkins. And then he wondered why she would not speak to him the rest of the day.

A Disagreeable Job.

A washerwoman applied for help of a gentleman, who gave her a note to the manager of a certain club. It read as follows: "Dear Mr. X:—This woman wants washing."

Very shortly afterwards the answer came back: "Dear Sir:—I dare say she does, but I don't fancy the job."



The above photo shows a two-ton Little Giant loaded with furniture owned by the Monrovia Transfer Company, Monrovia, Calif. This truck left Los Angeles on Saturday, December 18th, at 1 P. M., for Bakersfield, Calif., over the Ridge Route, a distance of 150 miles. The Ridge Route is considered the most mountainous road in America and its building was one of the greatest of engineering feats.

After unloading at Bakersfield the truck returned to Los Angeles, arriving at 1 P. M. Monday, December 18th. It is such tests as this that prove the Little Giant has no superior for rough and strenuous work.

LITTLE GIANT

506-8 W. Pico St., L. A.

リツツル、新正賀同馬
リツツルデヤイアント
西ピコ一街五〇六、八
エ、エ、ル、ミ、ラ
販賣所

HASHIMURA TOGO AND THE SMALL GIANT.

The accompanying advertisement was recently run in the Los Angeles Daily News, "The Rafu Shimpo." A free translation follows:

Happy New Year,

Appreciating the past favour, and wishing future trade solicited.

LITTLE GIANT,

made in 1 ton, 1½ ton and 2 ton capacities, and in chain and worm drive.

The strong construction of this truck is so well known, as the name indicates itself.

Now there are quite many Japanese owners.

Los Angeles Branch of Chicago Pneumatic Tool Co.,
506-8 West Pico St., Los Angeles, Cal.
Manager, H. L. Miller,

THE ARTESIAN WAY OF PUMPING WATER FROM DEEP WELLS

Has Many Advantages

INSTALL THE

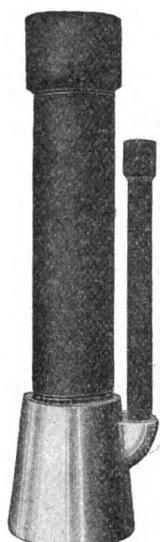
Chicago Pneumatic Water Lift Pump

- ¶ No pulling of wells caused by broken sucker rods, cut cylinders, bad check valves, etc.
- ¶ No trouble from sand or gravel cutting your cylinders and valve and thereby cutting the efficiency.
- ¶ Water is delivered free from oils, surface water and other impurities.
- ¶ Well equipment is guaranteed for the life of the pipes in the water.

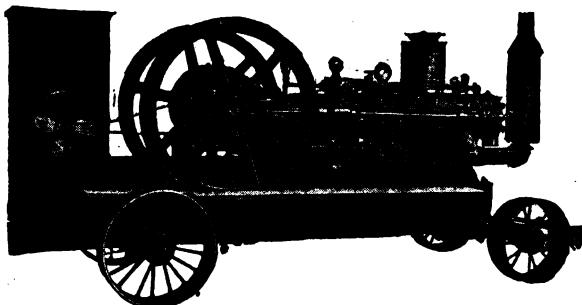
Let us know your conditions and get our proposition

CHICAGO PNEUMATIC TOOL CO.
1014 Fisher Bldg., Chicago 52 Vanderbilt Ave., N. Y.

Branches Everywhere



Chicago Pneumatic
Water Lift Pump



Destined for Russia, but held up at New York due to shipping complications, twelve of these sturdy, portable Fuel Oil Driven Compressors, Class N-SO, as illustrated above, have been returned to our factory at Franklin, Pa., and are subject to immediate delivery. Capacities from 196 to 309 cubic feet free air per minute. Have passed rigid government inspection. ¶ Will be sold tank mounted as shown, or unmounted for semi-portable or stationary service. Write for further information.

1014 Fisher Building, Chicago—CHICAGO PNEUMATIC TOOL CO.—52 Vanderbilt Ave., New York

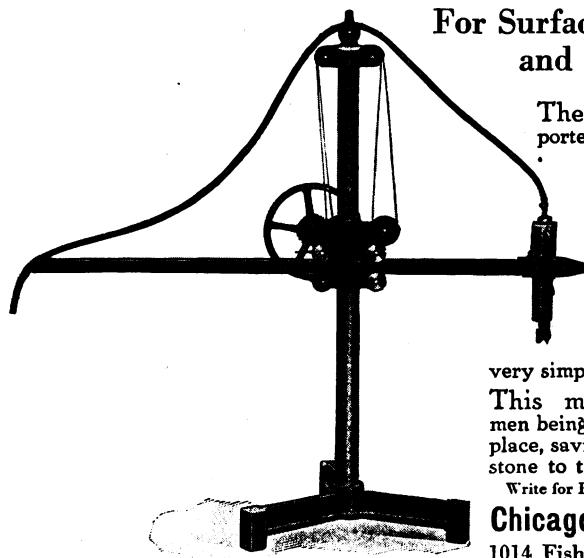
When writing to advertisers please mention Ideal Power.



Few of us can look back to the days when transportation was monopolized by oxen. Such is the privilege accorded Mr. J. J. Gareau, the gentleman at the wheel. Mr. Gareau, in spite of his 85 years, drives his Little Giant everywhere. Mr. Gareau is an enterprising farmer and lives near Montreal.

CHICAGO 2X JUNIOR SURFACER

For Surfacing Granite Blocks
and Similar Work



The upright column is supported by an iron base, so that it is held rigid. The arm which carries the pneumatic tool travels through the carriage which rolls up and down the column. All bearings are of roller type and adjustable to wear in all directions. This machine is built on practical lines and will stand hard usage. The construction is very simple and all bearings are liberal. This machine is portable, two men being able to move it from place to place, saving the trouble of bringing the stone to the machine.

Write for Bulletin 192 Branches Everywhere

Chicago Pneumatic Tool Co.

1014 Fisher Bldg. 52 Vanderbilt Ave.
CHICAGO NEW YORK

When writing to advertisers please mention Ideal Power.



SOLDCO Is Not a Dressing — It Preserves the Leather

IT'S simple operation to apply "Soldco" to your leather belts—a handful of cotton waste dipped in "Soldco" and wiped over the outside surface preserves the leather and makes your belts immune to dampness, steam, heat, chemical fumes and all atmospheric conditions.

"Soldco" drives out all moisture, grease, oil, dirt and prevents deterioration of your belts. Old belts which are ready for the junk heap can be curried with "Soldco" and put back into service.

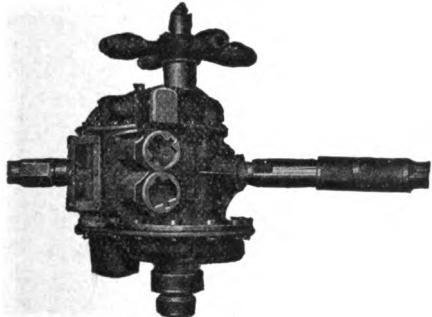
"Soldco" is non-acid, non-volatile, non-inflammable and non-combustible. By treating your shop belts with "Soldco" you double their service life and increase their transmission power 20%. Write for complete information and sufficient quantity of "Soldco" for a tryout on your belts.

THE DUNTLEY COMPANY

Fisher Building, Chicago

295 Fifth Ave., New York City

USE *Little Giant*



BALL Bearing Drills for Drilling, Reaming, Flue Rolling, Tapping, Wood Boring, etc.

The Ball Bearings

The increased port areas

The directness of port passages

The increased diameter of thrust bearings
The hand holes in cylinders, and

The method of bolting the bonnets and gear cases to the cylinders are features of Little Giant Drills resulting in the high power,

the long life and the economical upkeep and air consumption for which these machines are famous.

Send for Bulletin 127

Chicago Pneumatic Tool Co.

1014 Fisher Building, Chicago 52 Vanderbilt Ave., New York City

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and Electrical Appliances

BY THE

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1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON	Editor
Vol. XII.	MARCH, 1917
	No. 4

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

**The Duntley Hydro Pneumatic Gas
Generator.**

What has proven itself to be the realization of the wildest dream of the motorist—cheap fuel for automobiles—has recently been accomplished in the perfection of the Duntley Hydro Pneumatic Gas Generator, the invention of Mr. J. W. Duntley. By combining kerosene with gasoline in the proportion of half and half, and the addition of water and air, a mixture is obtained, which not only gives more power and greater mileage per gallon of fuel, but the cost is reduced by nearly fifty per cent.

The operation of the Duntley Hydro Pneumatic Gas Generator is simple. There are no moving parts. The vaporized mixture of coal oil and gasoline comes in contact with the water vapor. The resultant mixture, consisting of gasoline, kerosene, water and air, is exploded and complete combustion takes place, leaving no carbon on the spark plugs, and with no smoke whatever.

While the device may be applied to any pleasure car, it is an exclusive feature of Little Giant Trucks, and will be supplied when so requested.

A 2-ton Little Giant, loaded to capacity, and equipped with the Duntley Hydro Pneumatic Gas Generator was recently given a 72-mile test. On this trip it developed a third more power, and a third greater mileage than had been

possible with the gasoline burning carburetor, and a high class gasoline driven pleasure car which accompanied the Little Giant on the trip used two gallons more of fuel than did the motor truck. A speed of 39 miles an hour was obtained.

On Feb. 15th, a Little Giant 2-ton truck equipped with a Duntley Hydro Pneumatic Gas Generator and loaded to capacity undertook a trip to Des Moines, Ia., where it was to be exhibited at the Des Moines automobile show, which opened on the following Monday, Feb. 19th.

The time of year offered the hardest road conditions a motor truck would ever have to meet. In many places the snow drifts covered the roads to an extent that made them all but impassable. In other places the snow had melted and the road was full of slush and mud. Such conditions, together with the cold and stormy weather that was encountered, made a test that for hardships cannot be equalled, but the Little Giant, still carrying its capacity load arrived in Des Moines on schedule, having covered a distance of 393 miles, 95 of which were run on low gear. It consumed but 42 gallons of fuel on the entire trip, which makes a record that cannot be equalled.

Further information regarding the Duntley Hydro Pneumatic Generator will be supplied upon request.

Situations Wanted.

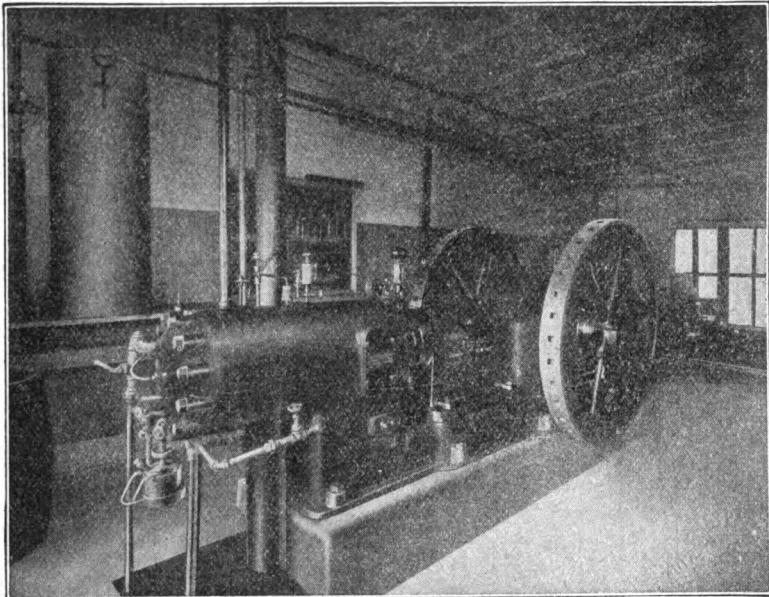
Wanted: Position by man with fifteen years' experience as head of purchasing and accounting departments with railways, locomotive and car works. Highest references. Address Ideal Power Ad. 22.

Wanted: Position as master mechanic or shop superintendent. Thirty-five years of age, married, strictly temperate, nineteen years' experience; past twelve and one-half years in official capacity with large shops. Can give best of references. Address Ideal Power Ad. 23.

**Giant Fuel Oil Engine Operating
Flour Mill**

Owned by the Laurel Milling and Grain Co., Laurel, Neb., and installed early in 1916. Has been in continuous operation — all through the wheat season, from ten to eighteen hours per day — without a cent of cost for repairs.

Absence of intricate mechanism and delicate adjustments and general simplicity of construction make the Giant Engine the ideal prime mover for isolated power plants. No expert attendance is required and the cost of operation is extremely low. Ask for Bulletin 34W and Folder 281.



Chicago Hummer Hammer Drills

are making new records for fast work and economical up-keep.

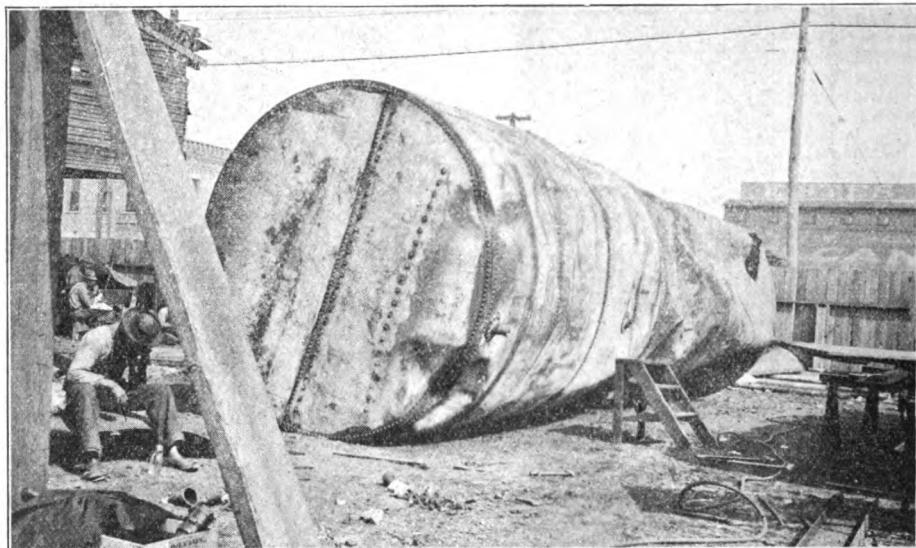
Independent Rotation Indestructible Ball Valves

Write for Bulletins and Prices

Chicago Pneumatic Tool Company

BRANCHES EVERYWHERE

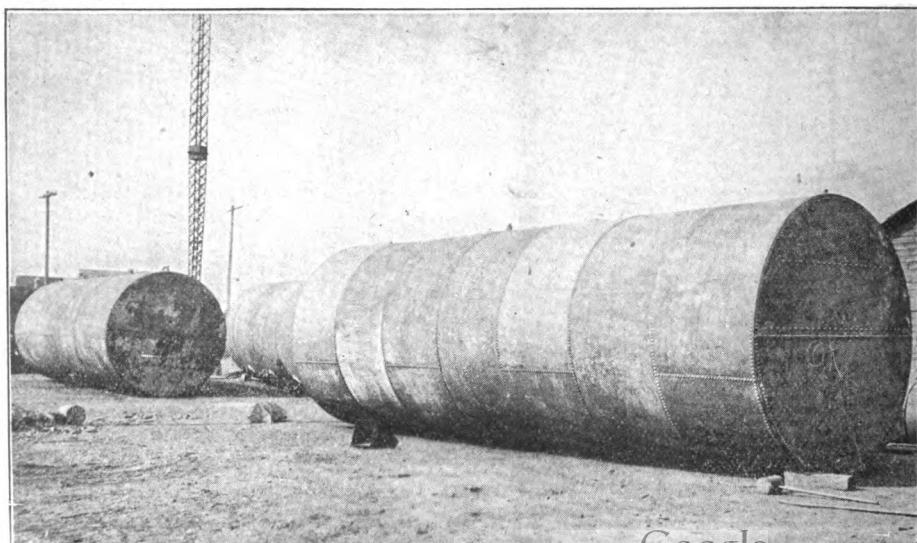
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52 Vanderbilt Ave., New York



**They Said It Couldn't Be Done But
"Chicago Pneumatic" Tools
Fooled Them.**

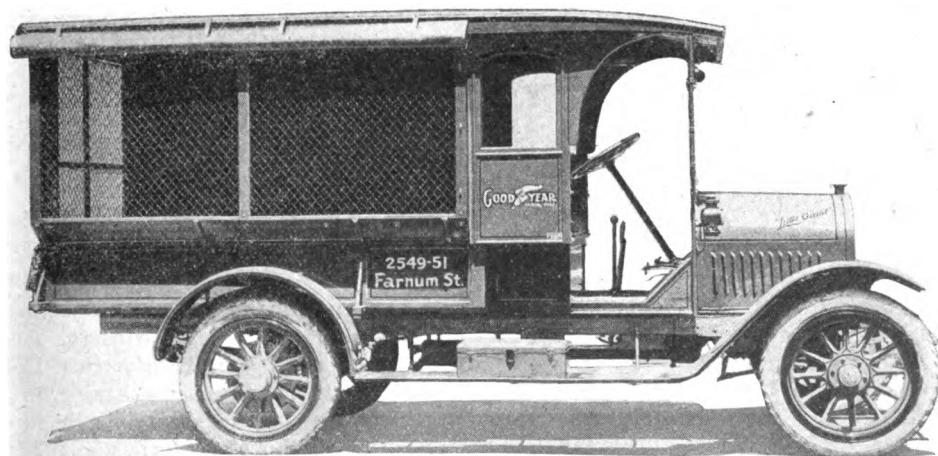
An interesting job was recently completed by the Johnson and Barry Steel Company, North Birmingham, Ala. This enterprising Southern firm undertook a repair job that had been declared by several experts to be impossible. To get an idea of what this firm was up against and how well they succeeded, take a look at the "before" and "after" pictures on this page.

Little Giant drills and Boyer riveters and rivet busters were used in repairing 12 large oil tanks 30 ft. long 10 ft. diameter. They were all burnt iron, melted, bursted in spots, having been warped by the huge fire of the Texas Oil Company's plant. The tanks had to be cut completely apart, straightened and every rivet cut and re-riveted with a Boyer hammer. All bursted iron was renewed, of course.





Apparently there is no end to the ways in which the Boyer Hammer can be used by ingenious contractors to cut costs. Here are two Boyer Hammers being used to clean paving brick. By hand these two men were only able to clean about 180 bricks per day, but with the Boyer Chipping Hammer the three men are cleaning an average of 3,000 bricks per day. The work is under the direction of R. P. Burnett, Contractor, Cleveland, Ohio.



A Little Giant owned by the Goodyear Rubber Company. Big business has confidence in Little Giant trucks and Little Giant trucks are making good in big business as well as small. Write for catalogue.



CHARLES B. COATES
Manager Electrical Department Chicago Pneumatic Tool Company

Since President W. O. Duntley, of the Chicago Pneumatic Tool Company, took out his first patents on the air cooled electric drill, the destinies of Duntley Electric Tools have been in the hands of Mr. Charles B. Coates, whose portrait illuminates this page.

A long practical experience in both

mechanical and electrical engineering has especially fitted Mr. Coates for this work. Under his care, the Electrical Department of the company has grown steadily from year to year since its organization about twelve years ago. The capacity of the electric tool factory—at Erie, Pa.—has been so taxed that a large

The Boyer Railway Speed Recorder



With Clock Attachment

Gives valuable, accurate data for the Engineering Departments. It records, graphically, the time at all points during the trip. Insures obedience of "Slow Orders" on the part of the train crew. Shows the performance of the locomotive on grades and curves. Inasmuch as acceleration, negative and positive, can readily be figured from the chart, it proves a reliable instrument for getting train resistance. Through the acceleration it is a simple matter to ascertain if the power is overloaded, which assists in tonnage adjustment.

SEND FOR BULLETIN 263

CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Bldg.

52 Vanderbilt Ave.

CHICAGO

NEW YORK

Branches Everywhere

addition has just been built to take care of the rapidly increasing business.

The development of the portable electric tool to its present high stage of efficiency, has called for much talent in both engineering and merchandising, and it is safe to say there is no man in this country, today, who is better posted in the comparatively new field of portable electric tool engineering than is Mr. Coates.

Uncomfortable Honors.

In 1862, an intimate friend of Mr. Lincoln's visited him in Washington, finding him rather depressed in spirits as the result of the reverses repeatedly suffered by the Federal troops.

"This being President isn't all it is supposed to be, is it, Mr. Lincoln?" asked his visitor.

"No," flashed Lincoln with twinkling eyes; "I feel like the Irishman, who, after being ridden on a rail, said: 'If it wasn't for the honor av th' thing I'd rather walk.'"

Consider The Hazard!

His Mother—"Here's an advertisement for a boy. You must look into it, John. 'Wanted—Boy for grocery, to work partly inside and partly out.'"

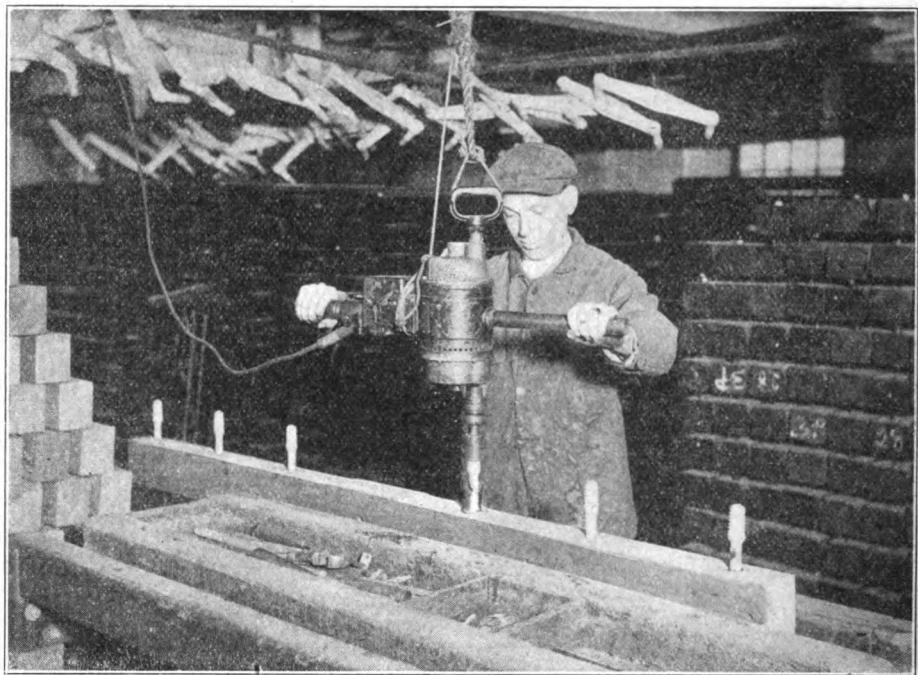
Jobless John—"Huh! What d'ye take me for, anyhow? What if somebody'd slam the door while I was at work?"

Both Satisfied.

A man down in Missouri put his hand in a mule's mouth to see how many teeth the mule had. The mule closed his mouth to see how many fingers the man had, and the curiosity of both man and mule was satisfied.

The teacher was hearing the history lesson, which dealt with the career of George Washington. Turning to one of the scholars, she asked: "James, what was Washington's farewell address?"

James arose with a promptitude that promised well for his answer. "Heaven, ma'am," he said.



No. 2 Duntley Electric Drill screwing pins in cross arms for Narragansett Electric Lighting Company, Providence, R. I., the holes having previously been bored with No. 0 Duntley Electric Drill.

Novel Uses for Duntley Electric Drills.

The Narragansett Electric Lighting Company, of Providence, R. I., manufactures its own cross-arms, and the greater part of the work is done with Duntley Electric Tools. The idea of using portable electric tools for this purpose originated with the Storekeeper, Mr. J. M. Stuart, who has worked out a process of manufacture that is interesting in showing the wide field for portable electric tools, and the many processes for which they may be utilized. A brief description of the work follows:

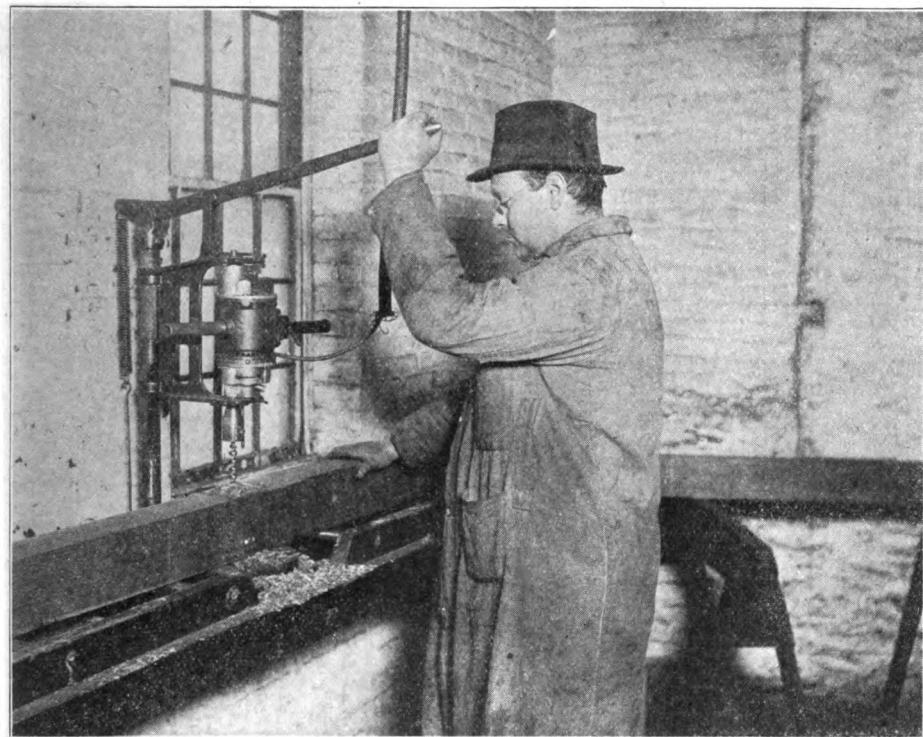
The cross-arms of 4x5 hard pine lumber, sawed and planed on all sides, are brought in, marked, and $\frac{1}{8}$ " holes are bored with a No. 0 Duntley Electric Drill mounted on stand as illustrated. These holes are bored $3\frac{1}{2}$ " deep. The cross-arm then goes to a buzz planer to be chamfered off. The pins are next applied. This is done with a No. 2 Duntley Electric Reversible Drill. The cross-arm

is then painted two coats with a Pneumatic Painting Machine.

A $2\frac{1}{8}$ " hole is then bored in side for mounting on pole with through bolt. Also $2\frac{3}{8}$ " holes in ends to prevent arms from splitting, and $2\frac{3}{8}$ " holes to hold braces. All of this is done with Duntley Electric Drills, and by their use the cost of this work has been reduced to one-third of what it was formerly.

The Narragansett Electric Lighting Company manufacture their own arms for the following reasons:

They can select best quality of long leaf yellow pine free from shakes and unsound knots. They put up nothing but a safe arm. They chamfer best side of the arm to make solid base for pins, whereas, the ordinary manufactured arm is invariably chamfered on the poor side. The arms as manufactured by them last from 15 to 20 years. The cost is reduced and cross-arms are produced in accordance with their own specifications.



Showing Use of Duntley Electric Drill and Drilling Stand in Manufacture of Cross Arms for the Narragansett Electric Lighting Company, Providence, R. I.

You Lie!

In the street of life, walking in the darkness of the shadow, hungry old Satan was out hunting with his dogs, the little imps of human weakness.

A man came walking down life's street. Satan said to the little imp, with a bitter face: "Go get him for me."

Quickly the imp crossed the street, silently and lightly hopped to the man's shoulder. In his ear he whispered: "You are discouraged."

"No," said the man, "I am not discouraged."

"You are discouraged."

The man replied this time: "I do not think I am."

Louder and more decidedly the little imp said: "I tell you, you are discouraged."

The man dropped his head and replied: "Well, I suppose I am."

The imp, hopping back to Satan, said

proudly: "I've got him, he is discouraged."

Another man passed. Again old Satan said: "Get him for me."

The proud little demon of discouragement repeated his tactics. The first time he said, "You are discouraged," the man replied emphatically: "No!"

The second time the man replied: "I tell you I am not discouraged."

The third time he said: "I am not discouraged. You lie."

The man walked down the street, his head up, going toward the light.

The imp of discouragement returned to his master crestfallen. "I couldn't get him. Three times I told him he was discouraged. The third time he called me a liar and that discouraged me."

The child is indeed father to the man; the former builds houses of blocks and the latter builds a block of houses.

In Charge of the Engineers

By WM. H. WOODWELL

Half a point, half a point,
Half a point upward,
Seeking efficiency,—

All of one hundred.
Forward the engineers,
Brilliant are their careers,
Seeking the maximum,
Seeking one hundred.

Forward the engineers!
Never a man dismayed
Even though others
Have stumbled and blundered.
Theirs is to reason why
Charges and costs are high,
Theirs is to do or die,
Seeking one hundred.

Meters to right of them,
Gauges to left of them,
Readings in front of them,
Tabled and charted.
Working on curves and plots,
Formulas, ohms and watts,
Finding the wasteful spots;
Never faint-hearted.

Problems to right of them,
Problems to left of them,
Problems before them;
We have all wondered,
If they can scale the peak,
Stopping each waste and leak,
Attaining the goal they seek,
Reaching one hundred.

Where can their glory fade,
Oh, the advance they made!
Steady progression.
Honor the part they played,
Honor the gain they made;
Noble profession.



This is a view of a Model 16 Two-Ton Little Giant Truck owned by B. B. Bowden, of Seaford, Delaware. It is loaded with 1,700 feet of 9'x8" lumber, weighing 3½ pounds to the square foot, and has just arrived from Mr. Bowden's sawmill located six miles in the country. Mr. Bowden's son Herman is at the wheel and Raymond F., another son, is sitting on the load.

Queer Girls.

A modest girl is Dolly Denn.

As shy as can be found;

She won't take off her glasses when

There is a man around.

—Cincinnati Enquirer.

The modesty of Fanny Fee

Leaves Dolly's far behind,

For if a man is looking she

Won't even change her mind.

—Detroit Free Press.

What would you say of Kitty Cooke?

Her plight was most distressing.

She feared to serve her salad, lest

Her guests would see her dressing.

—Auto-Suggestion.

Innocent Ida of Oneida

Who never did things by halves

Couldn't abide a bareback rider,

Nor the stock show's display of calves.

W. P. P.—Ideal Power.

Ever Feel That Way?

"Waiter!—hic—bring me a dish of prunes."

"Stewed, sir?"

"Now, thash none yer bizness."

Periodicals.

"Do you take any periodicals?" asked the minister on his first round on parish visit.

"Well, I don't," replied the woman, "but my husband takes 'em frequent. I do wish you'd try to get him to sign the pledge."

"Well, Myrtle, I'm leaving the house in your charge. I only hope I'll find it all right when I return this evening."

"I sincerely trust so, Madam, for I should hate to think of your being in a condition where you couldn't."—Puck.

Some Doubt About It.

"Mamma, is papa goin' to die an' go to heaven?"

"Why, Willie, what put such an absurd idea into your head?"

"How it is, Pat, that your friend Murphy is out of jail?"

"Faith, an' the man that he killed got well."



Rosy futures seldom grow on purple pasts.

When a man is selfish he shows himself a poor judge of men.

Good opportunities are lost to the lover who knows not how to embrace them.

Tell a girl that you are interested in her and she will find it hard to blame you.

The smaller the woman the easier it is for her to twist a big man around her finger.

A charitable speech does little credit to a man who is afraid to put his hand in his pocket.

After a politician has been dead thirty or forty years he is sometimes referred to as a statesman.

It is more blessed to give than to receive, but the majority of us know it merely from hearsay.

When the right girl meets the right man there is not much more to be said except by the minister.

A poet has been known to make dollars out of lines that ordinary mortals could not make sense out of.

Some men want the earth, but the sloppy merchant is usually satisfied if allowed to appropriate the sidewalk.

Few collisions occur on the path of virtue.

Love and strong drink make the world go round.

A man may have a lofty aim and still be a poor shot.

Too many men salt away money in the brine of other people's tears.

Few women could get into heaven on the testimony of their dressmaker.

Good qualities are jewels that only good breeding can set off to advantage.

There is more power in kindness than there is in dynamite, but it takes longer to develop it.

Adam owned the earth at one time. His experience should be a warning to those who want it now.

Nothing makes some men feel more important than their ability to answer the questions of a small boy.

Humanity is unequally divided between those who can't stand prosperity and those who can't get any to stand.

It keeps wives as busy providing things for the inner man as it does husbands in providing things for the outer woman.

It might be well to remember that the lengthening of the days doesn't prolong the reckoning of a thirty days' obligation.

The Chicago Pneumatic Tool Co.

MANUFACTURERS OF THE FOLLOWING

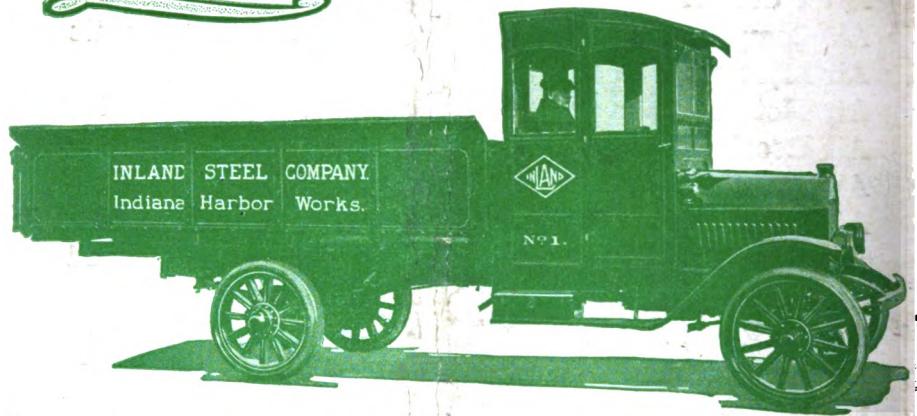
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After Coolers	Hammer Drills, Electric
Air Compressors	Hammer Drills, Pneumatic
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Air Motors	Hammers, Chipping and
Air Receivers	Calking
Air Jacks	Hammers, Stone
Air Lifts	Hoists, Duntley Electric
Airoilene Oil	Hoists, Pneumatic Geared
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BIG BUSINESS

USES

"*Little Giant*" MOTOR TRUCKS



Little Giant Two-Ton Truck owned by Inland Steel Company

MANY of the largest business concerns in the United States are using Little Giant Motor Trucks. Such firms as the Standard Oil Co., New York Central R. R., Burroughs Adding Machine Co., Inland Steel Co. and Good-year Tire Co. have selected the Little Giant because it proved in rigid, competitive tests, embracing nearly every well-known make of truck, to be the most economical, dependable and durable truck on the market.

The "Little Giant" Line

Convert-a-Car (converts a Ford into a One Ton Truck)
Model 15—One Ton Worm Drive
Model 16—Two Ton Worm Drive
Model 17—3½ Ton Worm Drive
Model 18—Five Ton Worm or Chain Drive

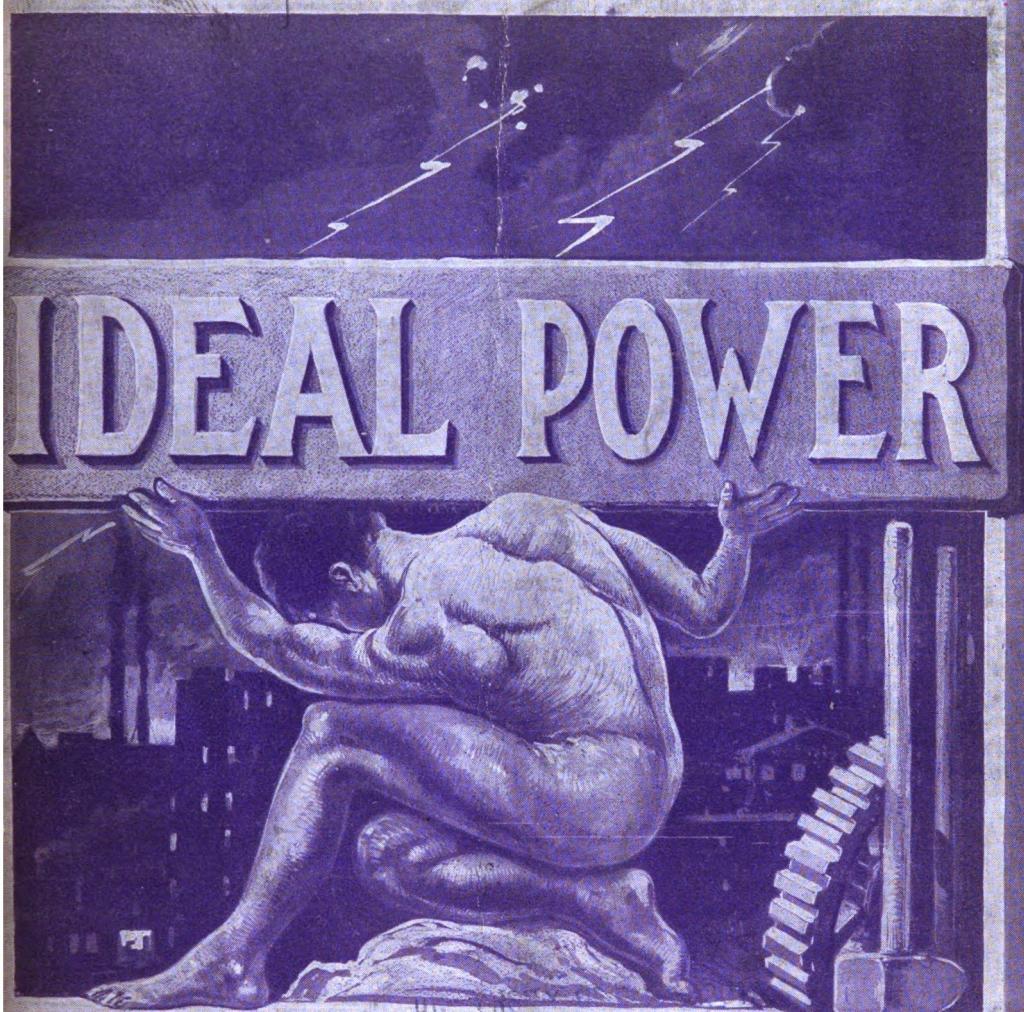
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LITTLE GIANT BUILDING, 1615 MICHIGAN AVENUE, CHICAGO

V.12 #5



JULY, 1917

AUGUST 1917

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**CHICAGO PNEUMATIC
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- 125...Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 127...Pneumatic Drills, Corner Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
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- 34-C..Erecting and Operating Instructions for Class A-G Giant Gas Engines.
- 34-E..Instructions for Installing and Operating Class N-SG Gas Driven Air Compressor.
- 34-F..Design and Construction Class "G" "Chicago Pneumatic" Compressors.
- 34-G..Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H..General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-I..Instructions for Installing and Operating N-SS and N-SB Compressors.
- 34-J..Instructions for Installing and Operating Class O Compressors.

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August 5-11, 1917—Universal Craftsman Council of Engineers, at Toledo, Ohio.

August 21-23, 1917—International Railroad Master Blacksmiths' Association, at Chicago, Ill.

August 30—September 1, 1917—American Railway Tool Foremen's Association, at Hotel Sherman, Chicago, Ill.

September 4-7, 1917—International Railway General Foremen's Association, at Hotel Sherman, Chicago, Ill.

September 10-15, 1917—National Association of Stationary Engineers, Evansville, Ind.

September, 1917—The Traveling Engineers' Association, Chicago, Illinois.

September 10-15, 1917—International Union of Steam & Operating Engineers, Cleveland, Ohio.

September 18, 19 and 20, 1917—Railway Signal Association, at Hotel Traymore, Atlantic City, N. J.

September 18-21, 1917—Roadmasters and Maintenance of Way Association of America, at Hotel Auditorium, Chicago, Ill.

September 24, 1917—American Institute of Metals, at Boston, Mass.

September 24, 1917—American Foundrymen's Association, at Boston, Mass.

October 16-18, 1917—Maintenance of Way Master Painters' Association of United States and Canada, Cleveland, Ohio.

October 16-18, 1917—American Railway Bridge and Building Association, at St. Paul, Minn.

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American Electro-Platers Society—President, H. H. Williams, St. Louis, Mo.; Secretary-Treasurer, Walter Fraine, 507 Grand Avenue, Dayton, Ohio.

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American Order of Steam Engineers—Supreme Chief Engineer, J. W. Pairent, Philadelphia, Pa.; Supreme Corresponding Engineer, Edw. A. Reboul, 1110 Earl St., Philadelphia, Pa.

American Railway Engineering Association—Secretary, E. H. Fritch, 1011 Karpen Bldg., Chicago, Ill.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Society of Civil Engineers—Secretary, Chas. Warren Hunt, 220 W. 57th St., New York City.

American Society of Engineering Contractors (Inc.)—Secretary, J. R. Wemlinger, South Ferry Bldg., New York City. Meetings: Second Thursday, every month.

American Society of Heating and Ventilating Engineers—Secretary, C. W. Obert, 29 W. 39th St., New York City.

American Society of Mechanical Engineers—Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Society of Naval Engineers—Secretary-Treasurer, Lieut. A. T. Church, U. S. N. Navy Department, Washington, D. C.

American Water Works Association—Secretary, J. M. Diven, 47 State St., Troy, N. Y.

Association of Civil Engineers, Cornell University—President, A. F. Williams, Ithaca, N. Y.; Secretary, A. S. Patrick, Ithaca, N. Y.

Association of Railway Electrical Engineers—Secretary, J. A. Andreucetti, C. & N. W. Ry. Co., Chicago, Ill.

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Canadian Society of Civil Engineers—Secretary, Clement H. McLeod, 176 Mansfield St., Montreal, Can.

Canadian Railway Club—Secretary, James Powell, Grand Trunk Ry., Montreal, Que.

Central Railway Club—Secretary, H. D. Vought, 95 Liberty St., New York.

Civil Engineers' Society of St. Paul—Secretary, Edw. J. Dugan, Room 7, Old State Capitol Bldg., St. Paul, Minn.

Cleveland Engineering Society—Secretary, C. E. Drayer, Chamber of Commerce Bldg., Cleveland, Ohio.

Connecticut Society of Civil Engineers—President, Clarence Blakeslee, New Haven, Conn.; Secretary-Treasurer, J. Frederick Jackson, Box 1304, New Haven, Conn.

Detroit Engineering Society—Secretary-Treasurer, B. V. Williamson, 1800 David Whitney Bldg., Detroit, Mich.

Engineering Association of the South—Secretary-Treasurer, W. Harwell Allen, 928 Stahlman Bldg., Nashville, Tenn.

Engineers' Club of Cincinnati—Secretary, E. A. Gast, P. O. Box 333, Cincinnati, Ohio.

Engineers' Club of Minneapolis—President, L. S. Gillette, 74 Chamber of Commerce, Minneapolis, Minn.; Secretary, Louis Clousing, 2411 Oakland Ave., Minneapolis.

Engineers' Club of Philadelphia—Secretary, R. H. Fernald, 1317 Spruce St., Philadelphia, Pa.

Engineers' Club of St. Louis—Secretary, W. W. Horner, 5203 Maple Ave., St. Louis, Mo.

Engineering Society of Purdue University, Lafayette, Ind.—Secretary, C. B. Penrod, 123 State St. W., Lafayette, Ind.

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Engineers' Society of Northeastern Pennsylvania—Secretary, T. F. McKenna, care of Engineers' Club, Scranton, Pa.

Engineers' Society of Western Pennsylvania—Secretary, Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa.

Illinois Society of Engineers—Secretary, E. R. Tratman, Wheaton, Ill.

Indiana Engineering Society—Secretary, Chas. Brossman, Indianapolis, Ind.

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Iowa Engineering Society—Secretary-Treasurer, Prof. J. H. Dunlap, Iowa City, Iowa.

Lake Superior Mining Institute—Secretary, A. J. Yungbluth, Ishpeming, Mich.

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Montana Society of Engineers—President, Martin H. Gerry, Jr., Helena, Mont.; Secretary, Clinton H. Moore, Butte, Mont.

National Electric Light Association—Secretary, H. G. McConaughy, 29 West 39th St., New York City, N. Y.

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New York Railroad Club—Secretary, Harry D. Vought, 95 Liberty St., New York, N. Y.

Ohio Engineering Society—President, Clyde T. Morris, O. S. U., Columbus, Ohio; Secretary, Jno. Laylin, Norwalk, Ohio.

Ohio Society of Mechanical, Electrical and Steam Engineers—Secretary-Treasurer, Frank E. Sanborn, Ohio State University, Columbus, Ohio.

Railway Club of Pittsburgh—Secretary, J. B. Anderson, Room 207, Penn. R. R. Station, Pittsburgh, Pa.

Richmond Railroad Club—Secretary, F. O. Robinson, C. & O. Railway, Richmond, Va.

Rochester Engineering Society—Secretary-Treasurer, F. C. Taylor, 34 Clinton Ave. North, Rochester, N. Y.

St. Louis Railway Club—Secretary, B. W. Frauenthal, Union Station, St. Louis, Mo.

Southern & Southwestern Railway Club—Secretary, A. J. Merrill, Grant Bldg., Atlanta, Ga.

Toledo Society of Engineers—President, L. M. Gram, 1047 Spitzer Bldg., Toledo, O.; Secretary, L. T. Owen, 1047 Spitzer Bldg., Toledo, O. Regular meeting, second Friday in each month.

Utah Society of Engineers—Secretary, Hugh C. Ellis, Capitol Bldg., Salt Lake City, Utah. Third Wednesday of each month, except July and August.

Vermont Society of Engineers—Secretary, Geo. A. Reed, Montpelier, Vt.

Western Railway Club—Secretary, J. W. Taylor, 1112 Karpen Bldg., Chicago, Ill.

Western Society of Engineers—President, B. E. Grant, 207 City Hall, Chicago; Secretary, E. N. Layfield, 1735 Monadnock Blk., Chicago.

MECHANICAL AND TRADE SOCIETIES.

Air Brake Association—Secretary, F. M. Nelson, 3014, 165 Broadway, New York, N. Y.

American Boiler Manufacturers' Association—President, M. H. Broderick, Muncie, Ind.; Secretary, H. N. Covell, Lidgewood Mfg. Co., Dikemar St., Brooklyn, N. Y.

American Electric Railway Association—Secretary-Treasurer, E. B. Burritt, 8 W. 40th St., New York City.

American Electric Railway Manufacturers' Association—Secretary, Fred C. J. Dell, 165 Broadway, New York City.

American Foundrymen's Association—Secretary, A. O. Backert, 12th and Chestnut Sts., Cleveland, Ohio.

American Institute of Metals—Secretary-Treasurer, W. M. Corse, 106 Morris Ave., Buffalo, N. Y.

American Railway Association—General Secretary, J. E. Fairbanks, 75 Church St., New York City.

American Railway Bridge and Building Association—President, C. E. Smith, 2078 Railway Exchange, St. Louis, Mo.; Secretary-Treasurer, C. A. Lichten, C. & N. W. Ry., Chicago.

American Railway Master Mechanics' Association—President, Wm. Schlafge, G. M. S., Erie R. R., New York, N. Y.; Secretary, J. W. Taylor, Karpen Bldg., Chicago.

American Railway Tool Foremen's Association—Secretary, R. D. Fletcher, Belt Railway of Chicago.

American Road Builders' Association—Secretary, E. L. Powers, 150 Nassau St., New York.

American Supply Men's Association—Secretary, Porter G. Jones, 574 The Bourse, Philadelphia, Pa.

Boiler Makers' Supply Men's Association—Secretary, Geo. slate, The Boiler Maker, 461 Eighth Ave., New York City.

Canadian Association of Stationary Engineers—Secretary, W. A. Crockett, Mount Hamilton, Ont., Can.

Canadian Roadmasters' Association—Secretary, J. M. Mackenzie, West Toronto, Can.

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General Superintendents' Association of Chicago—Secretary, A. M. Hunter, 321 Grand Central Station, Chicago.

International Railroad Master Blacksmiths' Association—Secretary, A. L. Woodworth, C. H. & D. Ry., Lima, Ohio.

International Railway Fuel Association—Secretary-Treasurer, J. G. Crawford, 702 E. 61st St., Chicago.

International Railway General Foremen's Association—Secretary-Treasurer, Wm. Hall, C. & N. W. Ry., 1061 N. Wabash, Winona, Minn.

International Union of Steam and Operating Engineers—President, Milton Snellings; Secretary-Treasurer, James G. Hannahan, 6334 Yale Ave., Chicago.

Master Boiler Makers' Association—President, D. A. Lucas, G. F. B. M., C. B. & Q. R. R., Havelock, Nebr.; Secretary, Harry D. Vought, 95 Liberty St., New York City.

Master Car Builders' Association—President, C. E. Chambers, I. M. P., C. R. R. of N. J., Jersey City, N. J.; Secretary, J. W. Taylor, Karpen Bldg., Chicago, Ill.

Master Car and Locomotive Painters' Association—Secretary, A. P. Dane, B. & M. R. R., Reading, Mass.

Maintenance of Way Master Painters' Association of United States and Canada—Secretary, F. W. Hager, The Denver Road, Ft. Worth, Texas.

National Association of Manufacturers—President, Col. Geo. Pope, Hartford, Conn.; Secretary, Geo. S. Budinot, New York City.

National Association of Stationary Engineers—Secretary, Fred W. Raven, 417 S. Dearborn St., Chicago, Ill.

National Founders' Association—Secretary, J. M. Taylor, Room 842, 29 S. La Salle St., Chicago, Ill.

National Railway Appliances Association—Secretary-Treasurer, C. W. Kelly, 122 S. Michigan Ave., Chicago, Ill.

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Railway Equipment Manufacturers' Association—President, F. N. Bard, Barco Brass & Joint Co., Chicago; Secretary, W. E. Brumble, Galena Signal Oil Co., Richmond, Va.

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Railway Storekeepers' Association—President, W. A. Summerhays, G. S. K., I. C. R. R., Chicago, Ill.; Secretary, J. P. Murphy, Box C, Collinwood, Ohio.

Railway Supply Manufacturers' Association—Secretary-Treasurer, J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa.

Roadmasters' and Maintenance of Way Association—Secretary, P. J. McAndrews, C. & N. W. Ry., Sterling, Ill.

Traveling Engineers' Association—Secretary W. O. Thompson, care of General Offices, N. Y. C., Cleveland, Ohio.

Universal Craftsman Council of Engineers—Secretary, Thos. H. Jones, Cherrydale, Alexandria County, Va.

Sometimes.

If times are hard, and you feel blue,
Think of the others worrying, too;

Just because your trials are many,
Don't think the rest of us haven't any.

Life is made up of smiles and tears,
Joys and sorrows, mixed with fears;

And though to us it seems one-sided,
Trouble is pretty well divided.

If we could look in every heart,
We'd find that each one has its part,

And those who travel fortune's road.
Sometimes carry the biggest load.

Mrs. Youngbride—"I want to get a hat for my husband. It's to be a surprise for him."

Clerk—"What size, madam?"

Mrs. Youngbride—"Really, I forgot to find out. But he wears a fifteen collar, so I suppose he'd want twenty or twenty-two in a hat, wouldn't he?"—Ex.

A

B

C

"CLEVELAND" Bridge Reamers

will take heavy cuts and work under trying conditions

Always Dependable

The
New York



CLEVELAND

Twist Drill Co.
Chicago

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High Grade Rubber Goods
Fire Hose
Reels, Nozzles
Fire Hose Carts
Rubber Cement
P. & W. Rubber Preservative
Rubber Boots
Leather-Soled Rubber Boots

Leather Belting
Upholsterer's Leather
Leather and Silk Fringes
Vestibule Diaphragms
Gimp
Brass Nails
Leather Head Nails

Signal Flags
Bunting
Linoleum
Cab Cushions
Cab Curtains
Track Jacks
Economy Soap Stock
Nut Locks

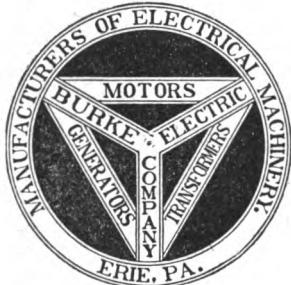
GUILFORD S. WOOD

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For All Purposes
Where Reliable
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**ALL SIZES ALL SPEEDS
ALL VOLTAGES**

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IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks
By THE IDEAL POWER PUBLISHING COMPANY
Fisher Building, Chicago

VOL. XII

JULY, 1917

No. 5

SAVING THE NATION \$500,000,000

From the New York World

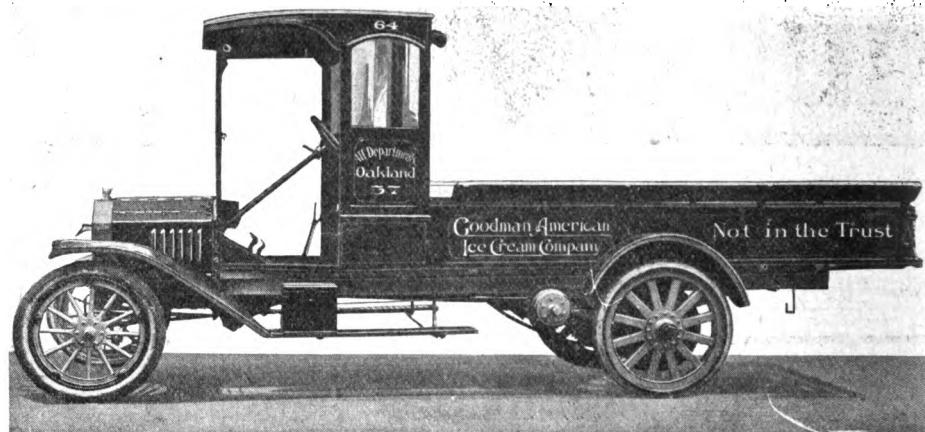
"Five hundred million dollars is a conservative estimate of the annual saving, according to experts, to the owners of automobiles (pleasure cars and trucks), effected by the Duntley Hydro-Pneumatic Gas Generator," says the New York World. "This device is being placed on the market at a most opportune time. It will bring an enormous saving to the nation without realizing this vast sum is accumulating in the pockets of the users of pleasure cars and trucks. This gas generator enables the use of low grade fuels such as kerosene, with greater resultant power than that derived from gasoline alone. It handles this low-grade fuel with absolutely perfect combustion, eliminates carbon deposit; there is an absence of any gaseous odor or smoke or vapor. The motor operates on a superheated hydrogen and carbon-monoxide gas of unknown chemical analysis. The mixture, however, is known beyond doubt to possess very high heat units, which increases the power of the motor from 10 per cent to 15 per cent, depending upon the condition of the motor.

No vaporized fuel enters the cylinders and, in consequence there is nothing to carbonize or to work past the piston rings and deteriorate the lubricating oil in the crank case. It will be appreciated

by motorists or owners of trucks, there will be less bearing troubles and the absence of carbon insures perfect seating of the valves. The valves will rarely require grinding in, except at long intervals. Rings, wrist pins and bearings will have lengthened life, and motor repairs will be reduced to a minimum. The motor runs cooler and spark plugs maintain clean and bright firing points which rarely ever require attention unless a piston ring should break and allow lubricating oil to pass by and into the combustion chamber. The power of the motor is increased from the fact that this new gas does not suddenly explode, but burns and expands behind the piston for its full length of travel, or in other words, duplicates the action of steam.

The fuel mixture becomes superheated and the water and air automatically consumed to harmonize with motor speed becomes, through unique mechanical construction of the generator, a superheated dry steam. The carbon in the superheated fuel having an affinity for steam is instantly absorbed by the superheated steam, and the whole is transformed into high temperature hydrogen gas.

Chemists will appreciate the impossibility of an analysis at the temperature at which the gas enters the explosive



The Little Giant Convert-A-Car, champion of light delivery, combining the economy and reliability of the Ford with the strength and endurance of the Little Giant. A one-ton Ford unit built to truck specifications.

chamber and is exploded, and in consequence its true chemical make-up may never be known definitely. But who cares, so long as the citizens of Uncle Sam are saved the stupendous sum of \$500,000,000 annually? The estimate is conservative and may be twice that sum.

While the Duntley Hydro-Pneumatic Gas Generator is an exclusive feature of Little Giant trucks, it may be used on any make of pleasure car, and those interested in using or marketing of this device are invited to correspond with the Chicago Pneumatic Tool Company.

The Little Giant Convert-a-Car the Only Ford Truck Unit Built in a Motor Truck Factory.

The marvelous growth of the Ford truck unit has been one of the surprises of the automobile industry. Hundreds of thousands of small business men who could never spare the money to purchase a truck of standard make invest in a Convert-a-Car and by buying a Ford pleasure car, either second-hand or new, or utilizing the one they already have, will possess a vehicle that is cheaper than a horse and wagon, is much more convenient, requires less attention and is more economical to maintain. Even large business firms whose loads are uniformly light are investing in Little Giant Convert-a-Cars.

A glance at the specifications of the Little Giant Convert-a-Car illustrates how carefully the Chicago Pneumatic Tool Company planned to maintain its reputation for manufacturing goods of highest quality. Convert-a-Car specifications speak in a convincing manner of super-strength and durability. Axles $2\frac{1}{2} \times 2\frac{1}{2}$ inches, solid forged, high grade carbon steel. Wheels are $34 \times 3\frac{1}{2}$ inches, heavy artillery, second-growth hickory, twelve rectangular spokes. Frame is 4-inch by $5\frac{1}{4}$ -lb. structural steel channel.

An additional feature of the Convert-a-Car is the simple and easy manner of attachment to the Ford car. No mutilation of the Ford car is necessary. The strong steel channel of the Convert-a-Car telescopes the pleasure car frame, to which it is rigidly and simply attached by four bolts, and should the owner decide at any time to re-convert the truck into a pleasure car, it can readily be done, for no parts of the Ford have been cut or altered in any way.

The Styles Again.

Jessie—"How do you like your new dress?"

Bessie—"It falls just a little below my expectations."

Jessie—"I noticed that, too. They are making them awfully short this year!"



A Model H Little Giant in the service of the New York Central Railroad. The short wheelbase of the Model H gives it an advantage in close quarters where turning room is at a premium.

The Little Giant in Railroad Service.

The New York Central Lines use Little Giant trucks at Cleveland (Collinwood), Ohio, and Elkhart, Ind. The official report of the use of one of these trucks at the New York Central (Collinwood) shops at Cleveland says:

"The Little Giant does everything that comes up. If there is a car around the yards that has a small supply of freight, the truck takes care of it rather than switch the car back and forth through the yards. If castings are needed or a ton and a half of material, the Little Giant is employed to do this work. It cuts out hiring three wagons and gives the railroad complete control of the service. It has made itself indispensable because of the many tasks it performs that were not in the first place intended to be a part of its work. All of the supplies for the Cleveland office are brought down from Collinwood on this truck at a marked saving of time and expense."

He Was It.

Bacon—"Your wife told my wife that new silk dress of hers came from a worm."

Egbert — "That's right. I'm the worm!"

Liquor Problem Solved At Last.

"Start a saloon in your own home. Be the only customer (you'll have no license to pay). Go to your wife and give her two dollars to buy a gallon of whisky, and remember there are sixty-nine drinks in a gallon. Buy your drinks from no one but your wife and by the time the first gallon is gone she will have eight dollars to put into the bank and two dollars to start business again.

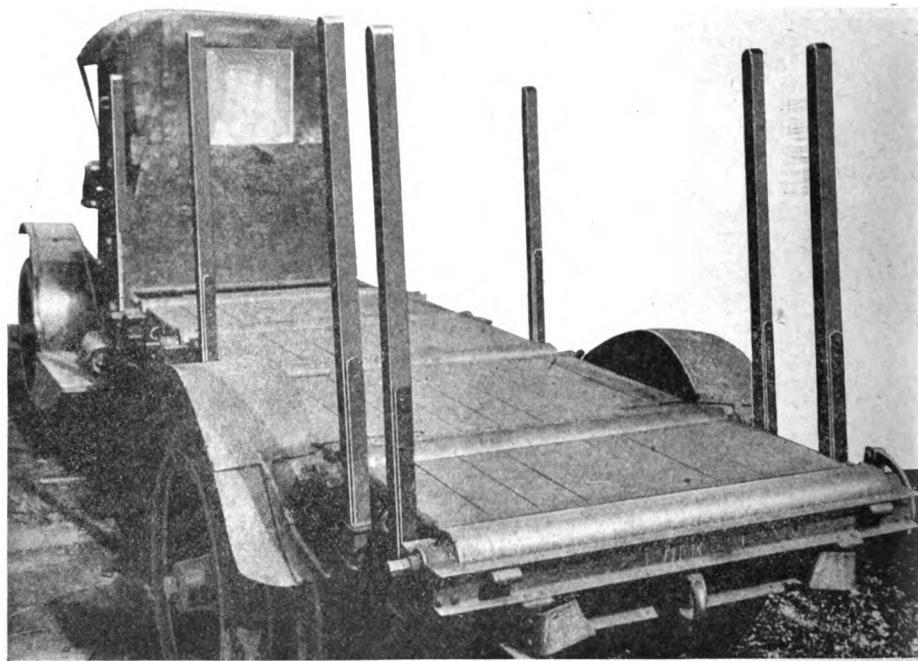
"Should you live ten years and continue to buy booze from her, and then die, with snakes in your boots, she will have enough money to bury you decently, educate your children, buy a house and lot, marry a decent man, and quit thinking about you entirely."

All In Line

The rehearsal was proceeding slowly. The star had several complaints to make, and the manager was losing patience.

Star Actor—I must insist, Mr. Stager, on having real food in the banquet scene.

Manager—Very well, then, if you insist on that you will be supplied with real poison in the death scene.



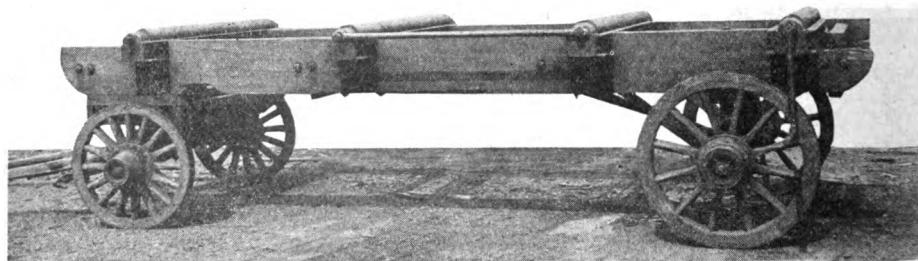
Showing arrangement of rollers constituting a loading and unloading device for motor trucks, fully described in subjoined article.

The Motor Truck in the Lumber Business.

The motor truck is a wonderful efficiency stimulator. It usually makes such astonishing reductions in hauling costs that its owner is aroused to seek ways and means of expeditiously loading and unloading to and from the truck. With a horse and wagon almost any way to get a load on or off is good enough, as a horse outfit can't go far in ten or fifteen minutes and there is not much incentive to try and save its time. But it is a different proposition with the motor

truck. It will haul a lot of goods, a long way, in a remarkably short time and hence with it "time is money."

In the attempt to save the valuable time of trucks many ingenious arrangements have been perfected. Special loading platforms have been constructed, heavy elevators that will lift an entire truck have been built, extra truck bodies have been provided so that while the truck is delivering one load another is being prepared for it, and now the lumber industry gives us the most efficient device of all of them. There may be



Showing Trailer with rollers used to load and unload lumber, fully described in article on "Motor Truck in the Lumber Business."



A one-ton Model H Little Giant owned by the J. E. Byrne Garage, Tyrone, N. Mex., ready to pull out a 3-ton truck of another make which has run into the ditch. Needless to say the powerful Little Giant was successful in getting the ditched machine onto the road. Mr. Byrne has owned his Little Giant for several years and says he is more than pleased with it. Mr. Byrne being in the auto repair business knows, of course, what is what in a truck.

other industries in which this or similar loading devices could profitably be used.

A portable platform (made from an old lumber wagon) is provided with four rollers set in the platform. The rollers are built of steel. The platform or loader, as it is called, is pulled around the yards to the cars or to the lumber pile and the lumber is loaded onto the platform. The rollers are locked by a bar extending between two of them, which prevents the lumber from sliding off. A crank is provided for the rear roller, which enables the load to be shifted or moved off the platform entirely.

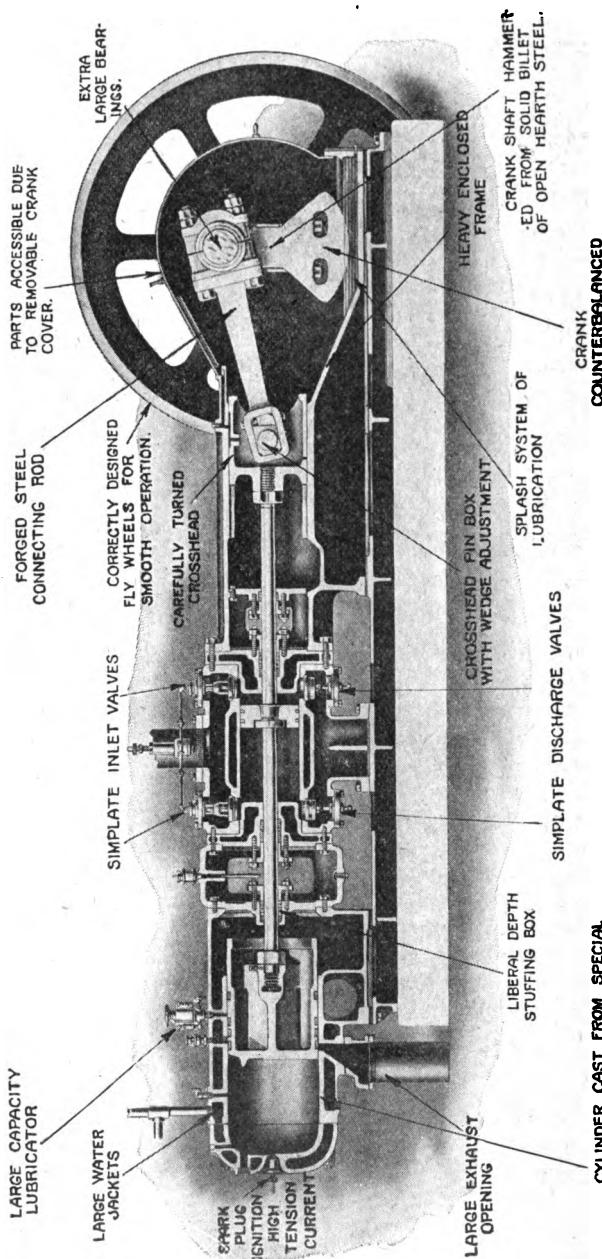
In the platform of the truck body proper five rollers are also set and the platform is the same distance from the ground as the portable platform or loader.

While a truck is delivering a load the portable platform is backed up to a car of lumber and loaded up. The truck upon returning to the yard is backed up to the portable platform. One man then

takes the crank and simply winds the load from the loader onto the truck. The locking device on the rollers holds it securely, but as an added precaution it is also chained.

When the loaded truck reaches the job, the locks and chain are removed and the crank applied at one of the rollers. The load is then backed part way off. A chain is placed around the entire load. A 2x4 is placed crosswise on the ground. The load is again turned off backwards until one end rests upon the ground. Another chain is placed around the lumber at the other end. The truck is driven about two feet ahead and the load drops in a perfect pile. As the load is raised slightly from the ground by the 2x4, the chains are then easily removed. The whole operation takes less time than it does to tell about it. Any lumber wagon in good condition can be made into the portable platform.

Write for the Chicago Pneumatic Tool Company's folder 298 for further data on motor trucks in the lumber business.



Sectional view of Class N-SG Chicago Pneumatic Simplate Valve Gas Driven Compressor,
fully described in Bulletin 34-X.

Gas and Gasoline Driven Compressors.

The Chicago Pneumatic Simplate valve, inclosed frame, self-oiling, gas and gasoline driven compressors comprising Classes N-SG and N-SGL are designed especially to meet the requirements of shops, mines, quarries and construction projects where ease of management, dependability, and economy of operation are desired. They are particularly suited for the hard service conditions often encountered in connection with the use of rock drills, pneumatic tools, air lift for water and other appliances. A feature is the attractively low first cost, made possible by quantity production.

The compressors are of the horizontal, straight line, single stage, double fly-wheel inclosed frame type and are without delicate or complicated parts. Power and air cylinders are closely connected in tandem. Substantial cast iron sub-bases, oak skids or portable tanks are furnished as desired. Splash lubrication is employed for the main bearings, cross-head guides, wrist pin and crank pin, making the compressor practically self-oiling.

The power cylinder of the N-SG gas driven machine is of an especial design, a valveless, two-cycle type with high tension electric ignition. Close regulation is secured by means of a fly ball governor, which regulates the gas and air admitted in accordance with the load demand. Thorough scavenging of the cylinder is assured by a deflector on the piston.

On the N-SGL a combined speed and pressure governor regulates the amount of gasoline admitted to the cylinder.

The outstanding feature of the air end is, of course, the use of Simplate valves, which makes small clearances and high efficiencies possible.

The N-SG Compressor is guaranteed to run satisfactorily on any natural or artificial gas containing 600 B. T. U.'s per cubic foot or over. This should not cause difficulty, since most artificial gases contain at least this number of heat units, and since natural gases for the most part run between 900 and 1100

B. T. U.'s. The N-SGL is guaranteed to run satisfactorily on any grade of gasoline.

Both machines require little attention, being well suited to rough, heavy duty under conditions which prevent the employment of a highly trained attendant.

Full details will be found in Bulletin 34-Y, which the Chicago Pneumatic Tool Company will supply upon request.

What Is Man?

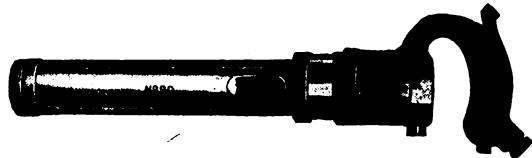
A man weighing 150 pounds approximately contains 3,500 cubic feet of gas, oxygen, hydrogen, and nitrogen in his constitution, which at 80 cents per thousand cubic feet would be worth \$2.80 for illuminating purposes. He also contains all the necessary fats to make a 15-pound candle and thus, with his 3,500 cubic feet of gases, he possesses great illuminating possibilities. His system contains 22 pounds and 10 ounces of carbon, or enough to make 780 dozen or 9,360 lead pencils. There are about 50 grains of iron in his blood and the rest of the body would supply enough to make one spike large enough to hold his weight. A healthy man contains 54 ounces of phosphorus. This deadly poison would make 800,000 matches, or enough poison to kill 500 persons. This, with 2 pounds of lime, makes the stiff bones and brains. No difference how sour a man looks, he contains about 60 lumps of sugar of the ordinary cubical dimensions, and to make the seasoning complete must be added 20 spoonfuls of salt. If a man were distilled into water he would make about 38 quarts, or more than half his entire weight. He also contains a great deal of starch, chloride of potash, magnesium, sulphur, and hydrochloric acid in his system.

Break the shells of 1,000 eggs into a huge pan or basin and you have the contents to make a man from his toenails to the most delicate tissues of his brain. And this is the scientific answer to the question, "What is man?"

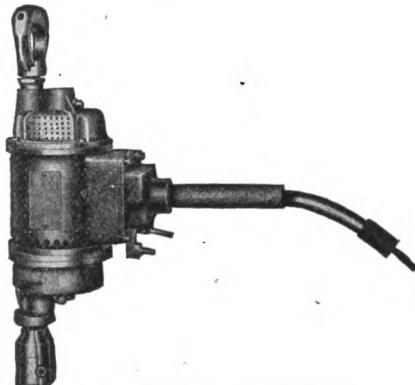
Nothing succeeds like the financial success some men make of a failure.

SPEED UP

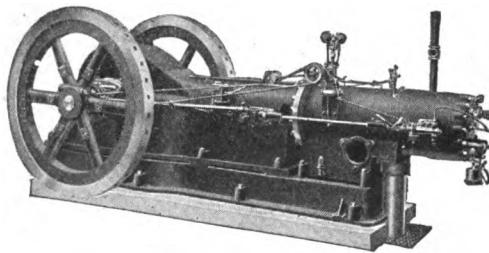
With Pneumatic



Boyer Riveting Hammer
Made in capacities for driving up to 1½-inch rivets.
Bulletin 124



Duntley Electric Drill
Will operate on direct or single phase alternating current.
Bulletin E-30



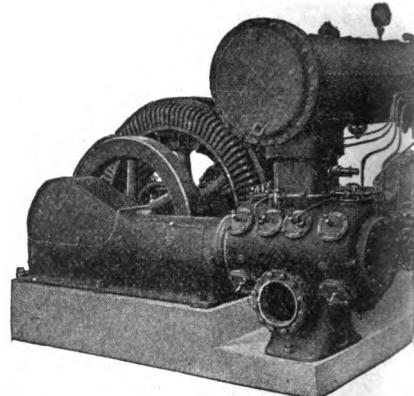
Giant Fuel Oil Engine
Bulletin 34-W

1014 Fisher Bldg.
Chicago

The present shortage of labor which is increasing day by day makes it imperative that labor be supplemented by machinery wherever possible.

This is best accomplished with pneumatic and electric tools because of their convenience and economy.

The CHICAGO PNEUMATIC line which has been the standard for twenty-five years, comprises pneumatic and electric tools and



Class O-CE Chicago Pneumatic Simplex Compressor

"Chicago Pneumatic" Compressors are 300 sizes and styles for operation by a short belt with idler, gasoline or fuel oil or direct motor drive in capacities up to 1,000 cubic feet of free air per minute.

Bulletin 34-M

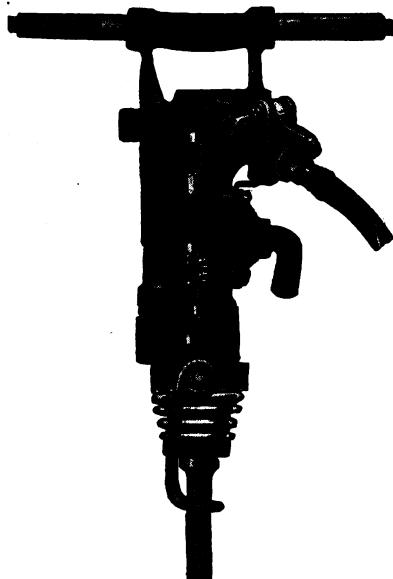
CHICAGO PNEU

BUSINESS

and Electric Tools

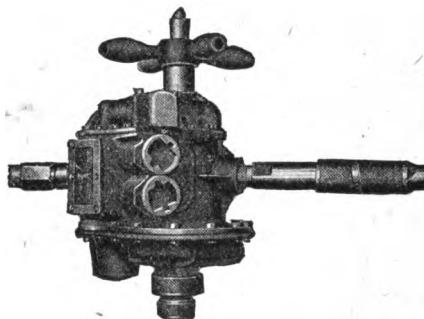
appliances of every description,— Boyer Pneumatic Riveting, Chipping and Calking Hammers; Little Giant Air Drills and Grinders; Duntley Electric Drills, Hammers, Hoists and Grinders; Chicago Pneumatic Simplate Valve Air Compressors; Giant Fuel Oil, Gas and Gasoline Engines; Hummer Hammer Rock Drills; Chicago Pneumatic Water Lift Pumps; and Little Giant Motor Trucks.

Write for Bulletins.



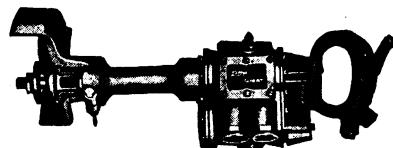
Hummer Self-Rotating Hammer Drill
Bulletin 216

MATIC TOOL CO. 52 Vanderbilt Ave.
New York

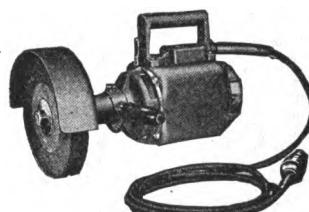


Ball Bearing Little Giant Drill
Furnished either reversible or
non-reversible. Capacity, 2
inches.

Bulletin 127



No. 10 Little Giant Grinder
For light work, speed light, 4200
R. P. M.
Bulletin 127



**Size No. 8 BP Duntley Electric
Portable Grinder**
Bulletin E-39

date Valve
e made in
steam, belt,
oil engine,
up to 5,000

Boyer Pneumatic Riveting, Chipping and Calking Hammers

Boyer Pneumatic Simplate Valve Air Compressors

Giant Fuel Oil, Gas and Gasoline Engines

Hummer Hammer Rock Drills

Chicago Pneumatic Water Lift Pumps

and Little Giant Motor Trucks

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

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1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON	Editor
VOL. XII	JULY, 1917
	No. 5

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United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

"Business is Not As Usual."

"I should say that business is not at all as usual," said W. O. Duntley, President of the Chicago Pneumatic Tool Co., which makes the Little Giant line of trucks.

"Indeed, the motor truck business is better than it has been in some time. Our current sales have topped all previous selling peaks.

"The campaign for economy now being so forcefully carried on by many agencies, and in particular the newspapers, has brought home in striking fashion the assured economy of motor transportation.

"Business executives are recognizing it as part of their duty to retire their horses, which eat up uncountable acres of food that should feed human beings. In addition to this need and endeavor for national economy, personal economy also dictates that, as the price of feed is constantly rising, the work horse must be retired because he is too costly a transportation unit.

"And everywhere, and in greater numbers than ever before, the efficient, economical motor truck is displacing the traditional weary-eyed, ever-eating horse."

WANTED—Position repairing pneumatic hammers and air motors with railroad company. Experienced. Capable. Address Ideal Power, Ad. 24.

A New Note in Truck Advertising.

An extremely interesting departure in motor-truck advertising recently appeared for the Little Giant truck, manufactured by the Chicago Pneumatic Tool Co.

Neglecting the universally accepted greater efficiency of the motor-truck, the advertisement proved from figures compiled by the Literary Digest, that horse-drawn vehicles were daily becoming more uneconomical.

The food supply for humans is decreasing. Its price is increasing. Yet horses are being daily fed it.

Seventeen million work horses each consume 136 bushels of oats per year, or 2,312,000,000 bushels of what might be oat products, the most nourishing food for human beings.

Again, the U. S. Department of Agriculture says it takes over three average acres to supply a human being, and more than five for a horse. So every team of horses costs more to maintain than three human beings.

The expert analysis continues: "Wherever a team of horses is employed to do work that can be done more effectively and more economically by a motor-driven vehicle, the up-keep of those horses is seriously menacing the food supply of human beings, even if it is not robbing three human beings of food.

"The great war will be won or lost by food. All the authorities are agreed upon that.

"Even if there be no actual pinch of hunger, the rising cost of foodstuffs is bound to crystallize into an irresistible public opinion whose object will be to compel the conservation of food.

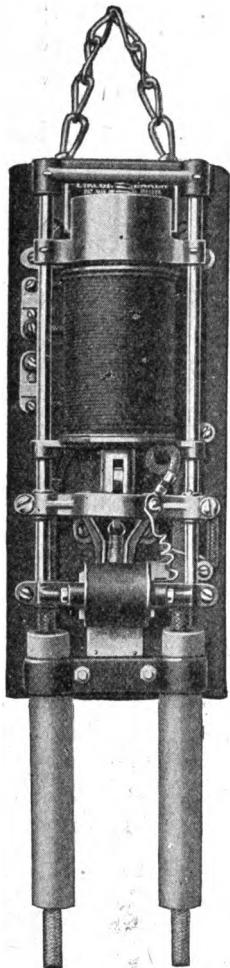
"Those who employ horses to do work that motor trucks can do better may have to justify the use of horses."

Compulsory.

Tired Mother (to restless child): "Now you sit still. I've brought you ten miles to enjoy this entertainment, and you shall enjoy it, if I have to pull every hair out of your head."

Duntley Self-Setting Circuit Breaker

(Patented May 16, 1916)



This Circuit Breaker, which possesses many novel features, was designed for use with Duntley electric tools, not only as a protection to the tools, but as a protection to the workmen as well. It may be placed anywhere in the drill circuit, as the self-setting feature makes its proximity to the tool unnecessary. The breaker is provided with two two-conductor cables, which are interchangeable so far as their connection to the line and the tool is concerned, thus obviating any special precautions in making connection. The circuit from the tool to the breaker is made by means of the ordinary two-conductor cable with which all Duntley direct current tools are provided.

The breaker operates on the solenoid principle, with a series coil to open the circuit at the predetermined point and an air-actuated dash pot to prevent the opening of the circuit when the momentary rush of current occurs at the time of starting the tool. Liberal arcing space is provided and a magnetic blow-out disrupts the arc quickly and effectively. A shunt coil which provides magnetic flux for the blow-out also serves to hold the breaker open as long as the switch on the tool is left in. When this switch is released by the operator the breaker resets itself ready to start the tool as soon as the switch is thrown in again. The resetting of the breaker is so nearly instantaneous that very little time is lost when an overload does occur, causing the breaker to open; nevertheless the operator soon learns just how much load he can apply without opening the breaker, and the result is that the tool is operated to its maximum capacity practically all of the time without endangering the windings.

The base of the Circuit Breaker is 5 inches wide by 12 inches long, and the entire mechanism is provided with a substantial pressed steel cover to protect it from injury. A chain is provided at the upper end so that it may be suspended at any convenient place.

The Duntley Self-Setting Circuit Breaker is made for direct current only and in capacities to take care of the No. 2 Duntley drill and larger.

For prices and further particulars address

CHICAGO PNEUMATIC TOOL COMPANY

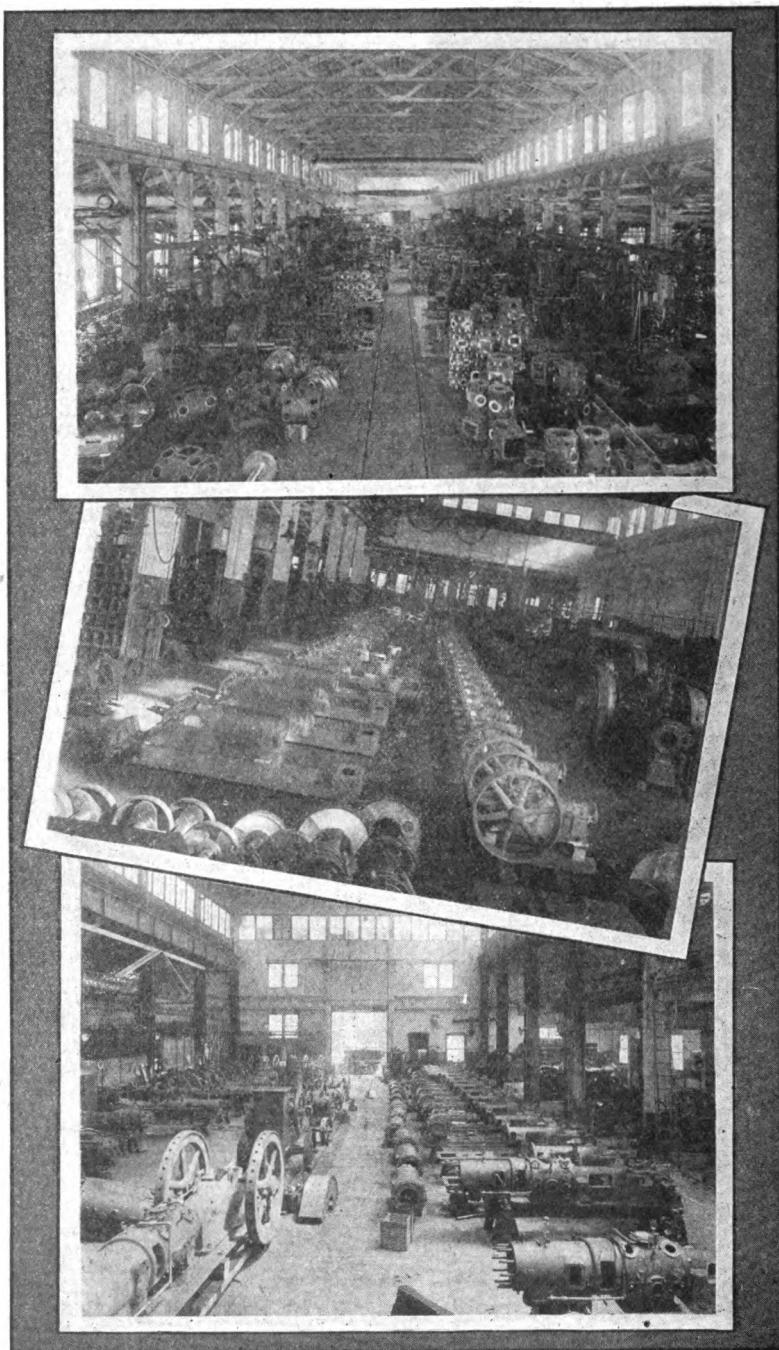
1014 Fisher Building

CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.

NEW YORK



Three views illustrating Quantity Production of Chicago Pneumatic Simplex Valve Compressors at Plant No. 1, Chicago Pneumatic Tool Company, Franklin, Pa.



When General Pershing returned from Mexico he was given an ovation by the citizens of El Paso. The above photo was taken as the head of the procession was passing the salesrooms of Don A. Carpenter & Co., southwestern agents for the Chicago Pneumatic Tool Company.

A traveling man was eating in a stuffy little restaurant one very hot summer day. There were no screens at the windows or door. The proprietress herself waited on her customers and shooed flies from the table at the same time. Her energetic but vain efforts attracted the attention and sympathy of the traveling man, who said:

"Would it not be better to have your windows and door screened?"

"Well, yes, I s'pose that would help some," replied the woman, after thinking a moment, "but 'twould look mighty lazy like."

"Papa, what do you call a man who runs an auto?"

"It depends on how near he comes to hitting me."—Houston Post.

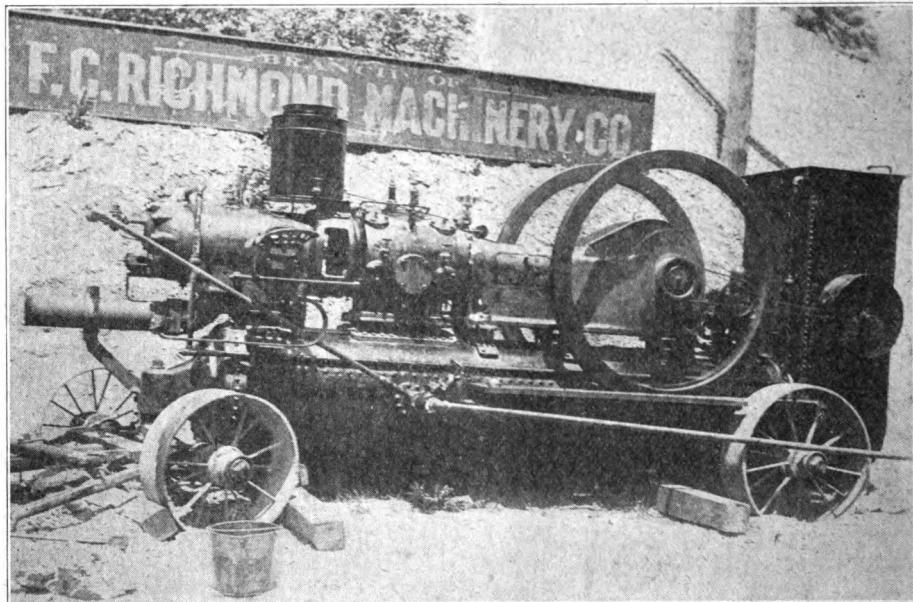
After the clock struck eleven the peevish father strode to the top of the stairs and called down: "Mabel, doesn't that young man know how to say 'good-night'?"

"Does he?" echoed Mabel from the darkened hallway below. "Well, I should say he does."

One of the greatest factors for producing insanity are the lawyers for the defense.

Some men have courage only when they lose their tempers.

As soon as a man discovers that he has made a mistake he begins to look around for someone to blame it on.



Chicago Pneumatic N-SO Fuel Driven Air Compressor at work on Good Roads Day for F. C. Richmond Machinery Co., Salt Lake City.

A Novel Celebration.

One of the Annual Outings made by the Salt Lake Commercial Club, and the Rotary Club of that city, is what is known as Good Roads Day, which is held on June 7th of each year.

On this day members of the above clubs, together with many other business and professional men, don their working clothes and spend the day with pick and shovel in bettering road conditions at some point in the vicinity of Salt Lake City.

For some years the road through Parley's Canyon, which is a portion of the scenic Lincoln Highway, has been the scene of much activity at this annual outing.

On Good Roads Day of this year the point of attack was an overhanging cliff which jutted out into the roadway, making an extremely narrow and dangerous section of road.

The F. C. Richmond Machinery Co., of Salt Lake City, contributed the use of a 12x8 $\frac{1}{4}$ x12-inch Chicago Pneumatic type N-SO Tank Mounted Air Compressor, as well as a number of A-66

Hummer Drills, and the necessary operators for both.

Some twenty-five 12-foot holes were



Chicago Hummer Hammer Drill putting 12-foot holes into rock at side of mountain in process of widening road on Good Roads Day at Salt Lake City.



SOLDCO Is Not a Dressing — It Preserves the Leather

IT'S simple operation to apply "Solco" to your leather belts—a handful of cotton waste dipped in "Solco" and wiped over the outside surface preserves the leather and makes your belts immune to dampness, steam, heat, chemical fumes and all atmospheric conditions.

"Solco" drives out all moisture, grease, oil, dirt and prevents deterioration of your belts. Old belts which are ready for the junk heap can be curried with "Solco" and put back into service.

"Solco" is non-acid, non-volatile, non-inflammable and non-combustible. By treating your shop belts with "Solco" you double their service life and increase their transmission power 20%.

Write for complete information and sufficient quantity of "Solco" for a tryout on your belts.

THE DUNTLEY COMPANY

732 Michigan Ave., Chicago

295 Fifth Ave., New York City

drilled along the base of this ledge of rock, and were exploded in groups of eight to ten holes. The resulting blasts widened the road approximately 8 feet at this point, and resulted in transforming an extremely dangerous section of highway into a safe one, which now has all the appearance of a boulevard. The

accompanying views show the compressor and one of the drills in this work.

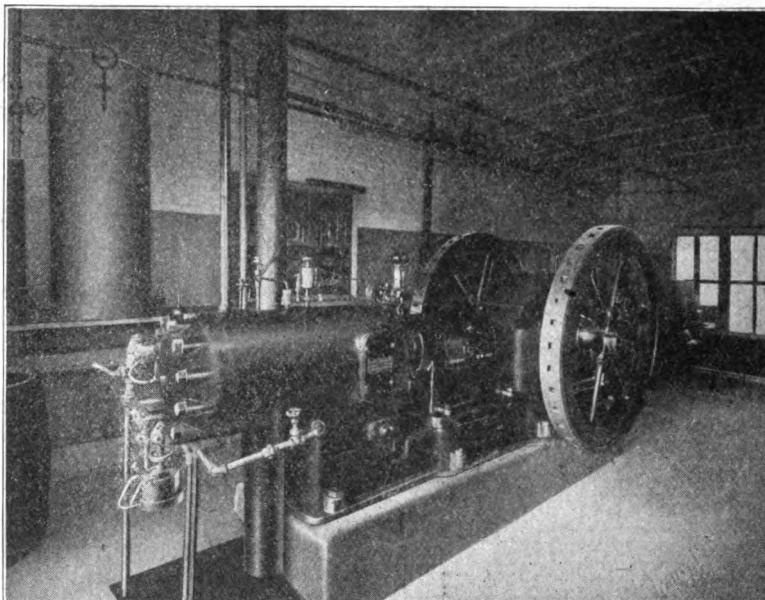
Satisfied.

Counsel—I'm sorry I couldn't do more for you.

Convicted Client—Don't mention it, guv'nor; ain't five years enough?



The United States Tire Co. uses Little Giant trucks. A Model 15 one-ton in their service in Chicago.



The power plant of the Laurel Milling and Grain Co., Laurel, Neb. A Giant Fuel Oil Engine was installed early in 1916 and has been in continuous operation—all through the wheat season, from ten to eighteen hours per day—without a cent of cost for repairs.

Absence of intricate mechanism and delicate adjustments and general simplicity of construction make the Giant Engine the ideal prime mover for isolated power plants. No expert attendance is required and the cost of operation is extremely low.

Oil Fuel Effects a Saving of 41 Per Cent.

The Federal Public Works Department of Canada has been making some interesting experiments in regard to the relative economy of coal and oil as fuel on Government-owned dredges. The test was made on the dredging fleet employed in British Columbia, and the results show a saving of \$37,164, or over 41 per cent, for the year's operations on eight dredges.

"It may be pointed out also," says the deputy minister in his report, "that the saving relates not only to the cost of fuel alone, but a very considerable additional saving is effected. Inasmuch as the fuel oil allows steam to be raised much more quickly, the cost of firing and the cost of handling the fuel are much decreased, and there is less wear and tear on the vessels."

Life is one Dear thing after another.
Love is two Dear things after each other.

The Mechanical Age.

When speaking to a body of working-men the other evening, I made this statement: "The reason why you have so much more today than your fathers had forty years ago is not because you work harder, but because you have better machinery to work with. You really don't work as hard as your ancestors did. The inventors of machinery and those who had the courage to make and install these machines are the ones whom you should thank."—Babson.

"I see you have your arm in a sling," said the inquisitive passenger. "Broken, isn't it?"

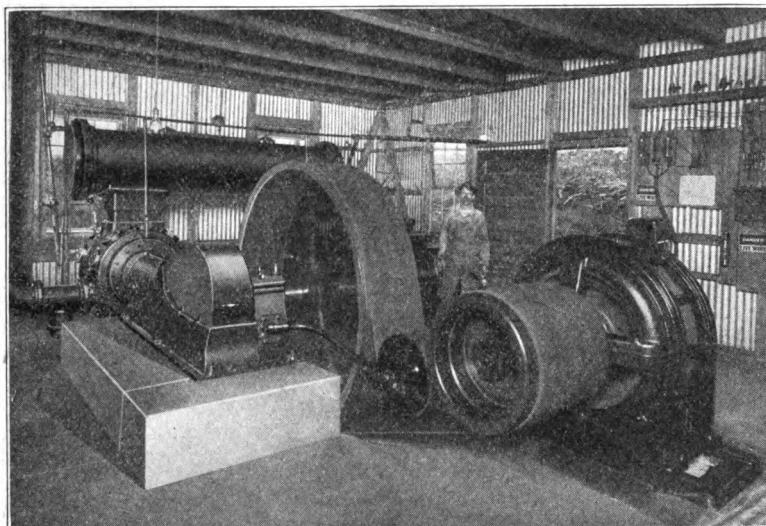
"Yes, sir," responded the other passenger.

"Meet with an accident?"

"No; broke it while trying to pat myself on the back."

"Great Scott! What for?"

"For minding my own business."



Chicago Pneumatic Class OCBE Compressor. One of six installed by the Alabama Co., Birmingham, Ala.

A 20x12x16 O-CBE Air Compressor in the service of The Alabama Company at their Hammond, Ala., iron mine about seven miles from Birmingham. The above installation is one of six Chicago Pneumatic Compressors installed by the Alabama Company. As a result of the perfect service which they obtained from the original compressor installed at the Attalla mines, and because of the wonderful efficiency of the Simplate Valves, with which all Chicago Pneumatic Compressors are equipped, The Alabama Company have installed Chicago Pneumatic Compressors in all of their plants.

The Alabama Company is regarded as one of the most progressive and prosperous institutions in the South and a large part of its present prestige is due to the untiring efforts of Mr. C. E. Morgan, Chief Engineer and General Superintendent, who has practically rehabilitated all of their various plants, including furnaces and ore and coal mines.

Caller—I suppose you can spell all the short words, Bobbie?

Bobbie—I can spell a lot of big ones, too. I can even spell words of four cylinders.

A Deep Shaft.

Here is a yarn I heard while acting as inspector on the Catskill aqueduct. Two miners were arguing about deep shafts they had seen. Finally one said: "Aw! you don't know what a deep shaft is. Why when I was out west I struck a town where they said there was a deep shaft, so I went to look her over. When I got to the location I found the hoist house was made of cut stone and inside it had a marble floor. I went in and there was the biggest hoist I ever saw running like hell and the hoist runner was sitting in a chair sound asleep. I ran over and woke him up and I says, 'You will be pulling the skipp through the head house if you don't stop her.' He says, 'What day of the week is it?' and I says, 'Tuesday.' 'Oh, hell!' he says, 'she won't be up till Friday.' That's what I call a deep shaft."—H. S., Bronxville, N. Y.

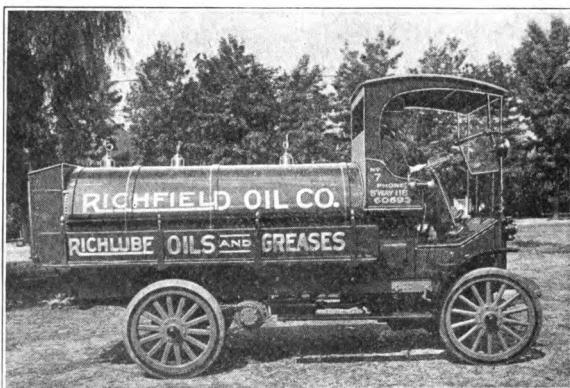
She winds a towel around her head and calls for a bucket of water—it means the beginning of a big day.

He winds a towel around his head and calls for water—it means the end of a big night.



A LITTLE GIANT TRUCK IN THE SERVICE OF THE
GREATEST AMERICAN SPORT.

The St. Louis Cardinals, the most dangerous contender in the National League pennant race, a team that is feared by all the league. Manager Huggins has shown remarkable talent in picking young players and getting a winning combination. The team is now (at the time we go to press) in third place, within striking distance of the leaders, the New York Giants. It is leading the league in fielding and base running. The team will bear watching. The Cardinals look well riding in a Little Giant Truck, don't they? Hans E. Seidl and Jack Ryan of the Tool company are on the running board.



A LITTLE GIANT TRUCK WITH SPECIAL TANK BODY IN THE SERVICE
OF THE RICHFIELD OIL CO., LOS ANGELES.

The tank is divided into three compartments, one each for gasoline, distillate and lubricating oil. The gasoline and distillate compartments are equipped with two faucets each for drawing contents quickly. The Richfield Oil Co. find the outfit very efficient and far more rapid and efficient as a distributor of oil than the former horse and wagon method.

None Would Admit It.

In ancient Greece there lived a learned Judge who was very deaf. Before him one day there appeared two litigants who also were deaf. There being no attorneys in these days, the Judge invited the plaintiff to state his case.

The plaintiff arose. "This man," he said, pointing to the defendant, "is a tenant in my property. He hasn't paid any rent for a long time, and refuses to do so. I ask your Honor for a decree which will enable me to collect what is due me."

The plaintiff, having finished and sat down, the Judge motioned for the defendant to stand and tell his side of the story. The defendant said, "I do not own the dog. I am sorry he bit the gentleman, but he does not belong to me, and I do not feel that I should be responsible for the damage he inflicts."

The defendant sat down and the Judge drew his robe a little closer about. "To forget the ties of blood," he observed, "is exceedingly reprehensible. She is your mother, and must support her."

On His Way.

"I'se gwine to quit, Boss. I'se got a bettah job."

"Bigger pay, Sam?"

"No, sah; de pay's smaller, but the work's easier."

"Sure, Oi'll write me name on the back o' your note, guaranteein' ye'll pay ut," said Pat, smiling pleasantly, as he indorsed Billup's note, "but Oi know ye won't pay ut. We'll have a laugh at th' expense of the bank."

"Oh, Myrtie! Weren't you frightened to death when that burglar broke into your room?"

"Frightened 's no name for it; I was dressing."

"Mercy! how terribly embarrassing! Whatever did you do?"

"Oh, he was very considerate, he covered me with his revolver."

The Penalty of Getting Funny

A salesman happened to call on a merchant the other day, and at the same time there also entered a poor old woman soliciting alms.

The merchant, wishing to play a joke on the salesman, told the woman to "ask the boss," at the same time pointing to Mr. Salesman.

Mr. Salesman was thunderstruck for the moment, but, regaining his self-possession at once, said, turning to the merchant, who was a very small man, "Boy, give this poor woman a dime out of the till."

The merchant paid.

Preparedness.

The minister came to Johnson's house one afternoon to a christening party—he was to christen Johnson's little son, John, Jr.

"Johnson," said the minister solemnly, taking his host aside before the ceremony, "Johnson, are you prepared for this solemn event?"

"Oh, yes, indeed, doctor," Johnson beamed. "I've got two hams, three gallons of ice cream, pickles, cake—"

"No, no, Johnson," said the minister with a smile. "No, no, my friend, I mean spiritually prepared."

"Well, I guess yes! Two demijohns of whisky and three cases of beer!" Johnson cried in triumph.

Mistress—Did you see if the butcher had pig's feet?

Maid—No, ma'am, I couldn't, he had his boots on!

Wife—Do you know, you are growing handsome, hubbie?

Husband—Yes, it's a way I have when it gets anyway near your birthday.

Fame and fortune await the inventor of an alarm clock that will awaken only the one who wants to get up, and not everybody else in the house.

Many women are not as fresh as they are painted and lots of men are more so.



Real success consists in achieving satisfaction.

Many a man seems to have the courage of a crawfish.

Never start on a journey Friday if Saturday is pay day.

Fools throw kisses, but the wise men deliver them in person.

A woman's vanity begins with her hat and ends with her shoes.

Liquor affects a man's brain, if he has any; if not, it affects his legs.

Favors are seldom satisfactory. The best way is not to need them.

Great men do much for others and take it out in posthumous fame.

A vivid imagination is often even more dangerous than a little learning.

When Adam and Eve put on fig leaves they organized the first style show.

Getting up in the morning is a struggle for those people who do not make it worth while.

Travel often broadens a man's mind and also his girth, if he can afford to stop at first-class hotels.

No man is so strong or great that he is not afraid of somebody. The chances being that the somebody is a woman.

Bruises should be judged solely by the way they were obtained.

Silent contempt is responsible for many an undelivered blow.

It is better to be slow to anger than to be handy with a six-shooter.

Many a man has lost lots of money through the hole in the top of his pocket.

Some women marry for the purpose of obtaining a listener who can't get away.

Truth is better than falsehood, but false teeth are better than no teeth at all.

Insomnia is responsible for much of the imagination and ignorance in the world.

There is no hope for the man who begrudges himself an occasional hearty laugh.

A girl is always sure she is in love with some man, even if she isn't sure which man.

If your daughter makes a good marriage, you always accept it as proof of your smartness.

"He was the hero of two wars," read the inscription on a tombstone. He had been married twice.

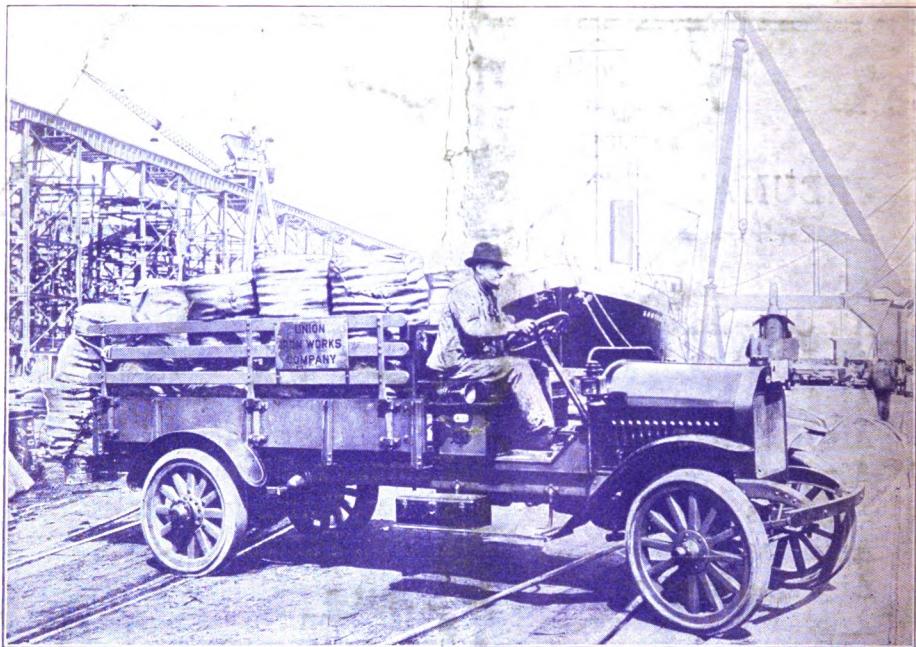
We would get more enjoyment out of a dollar if it took as long to spend it as it does to earn it.

The Chicago Pneumatic Tool Co.

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PNEUMATIC TOOLS, APPLIANCES, ETC.

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Air Injectors	Hammers, Riveting
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Airoilene Oil	Hoists, Pneumatic Geared
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Grinders, Portable Electric	Water Lift Pumps
	Winches, Portable



A Model 16 two-ton *Tinie Giant* doing its bit where activity is greatest.
Scene in the shipyards of the Union Iron Works Co., San Francisco

The decreasing supply and increasing cost of food stuffs is motorizing the transportation world. Those who employ horses for doing what motor trucks can do may soon be called upon to justify their use.

To those prospective users of motor trucks who believe in the value of past performance, who believe that long experience in manufacture spells quality of product, who believe that strong financial backing and prestige are essential to a guarantee, we recommend our master product—

Equipped with Duntley Hydro-Pneumatic Generator, using kerosene, distillate or other low grade fuel at
Saving in Fuel Cost of 50%

The *Tinie Giant* Truck

Capacities: 1, 2, 3½ Tons and Convert-a-Car (Ford one-ton truck unit)
ASK FOR CATALOGUE AND PRICES

Chicago Pneumatic Tool Company

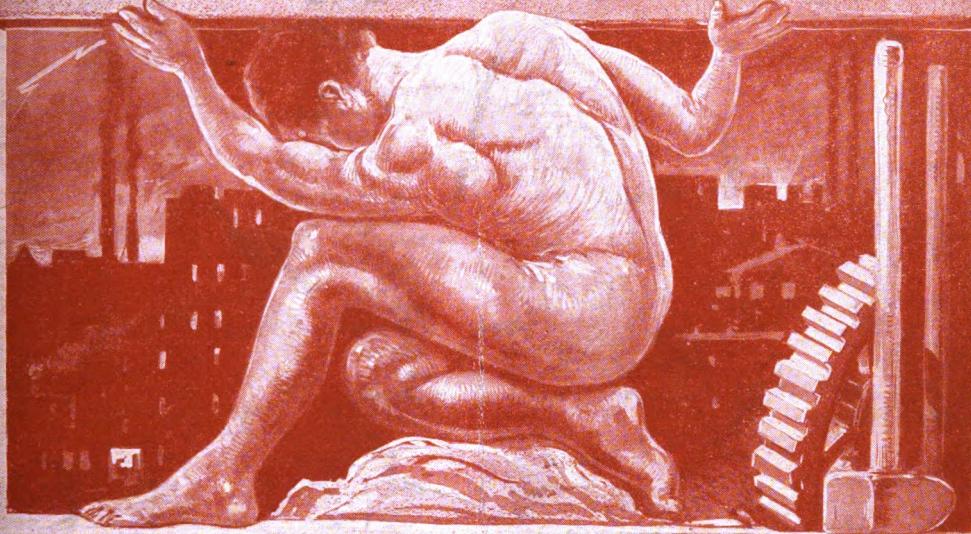
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Vol 16 #6

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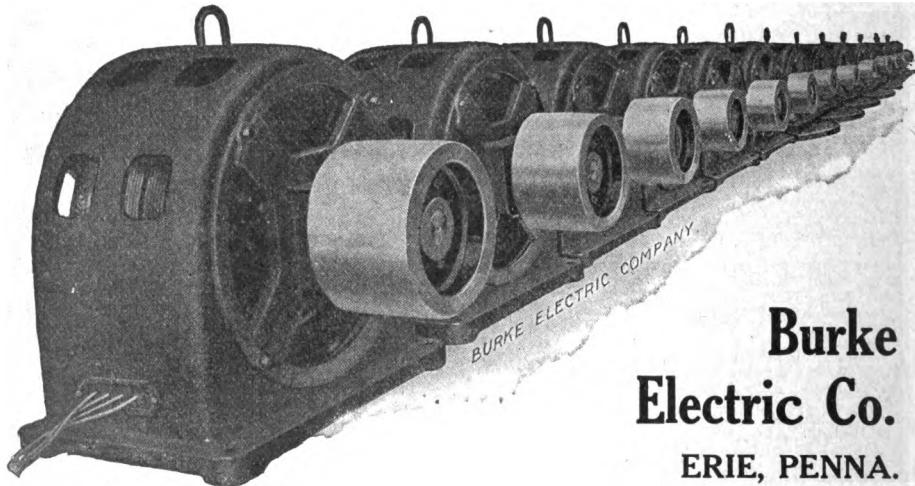
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REDUCING THE HIGH COST OF POWER

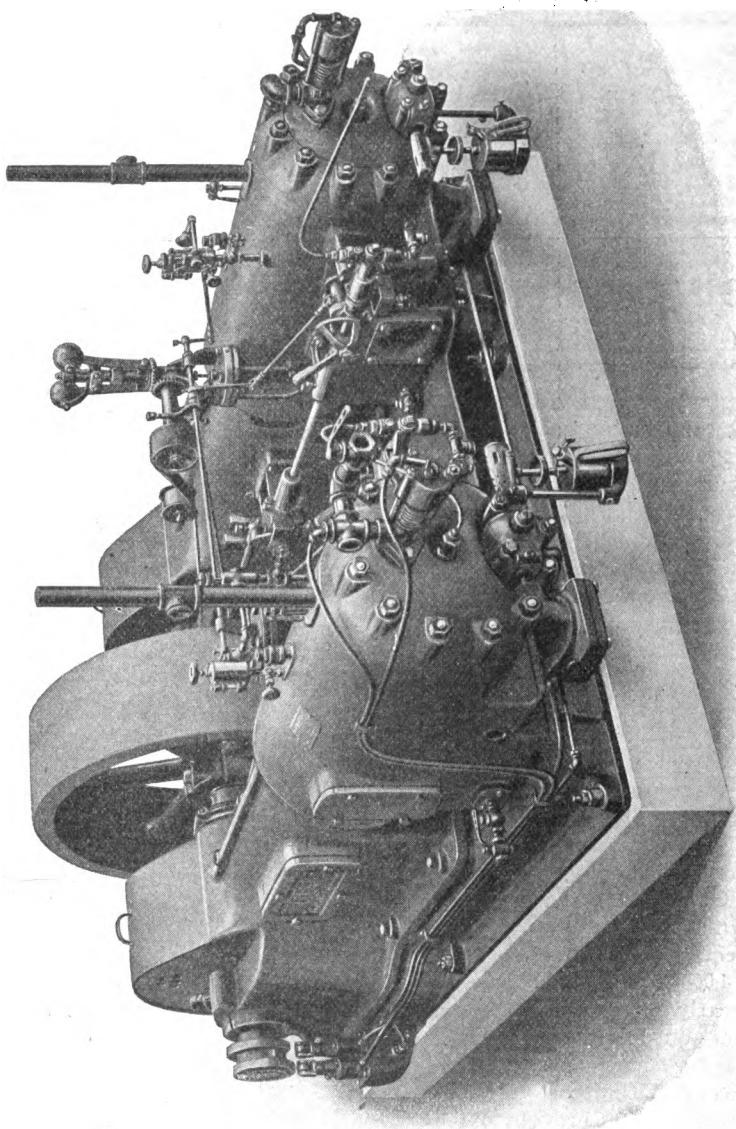
The recently developed and constantly increasing enthusiasm among the engineering fraternity for the oil engine is another tribute to that machine as a factor in "reducing the high cost of power." For with the price of coal steadily rising, manufacturers have been giving more and more serious attention to the oil engine as the solution of the power cost problem. Its growing popularity has caused its manufacturers to predict freely that it will in time supersede the steam engine as the most common means of generating power.

All users of power, electrical, steam or otherwise, are coming to understand that the oil engine is likely to be the standard power generating machine of the future. Ocean going steamships are now built with single units and submarines are equipped with high speed engines for 4,000 mile cruises. The objective of nearly all of the oil engine manufacturers—an internal combustion engine operating on inexpensive fuels—has not changed during the years, but the many improvements brought out by the Chicago Pneumatic Tool Company in its "Giant" engine has made the oil engine of a few years ago seem as antiquated as the "one lung" high wheeled automobile that we sometimes see at motor shows.

Simplicity has been the keynote of

every improvement in the Giant engine, and the result has been a rugged machine which an untrained man can easily understand and which can be operated on low-grade and inexpensive fuels. A few of the oils recommended are 28 degree Beaume Fuel Oil, Solar Oil, Twenty-seven plus, Calol, Diesol, Star Oil and all of the distillates between kerosene and lubricating oil. These oils are from 28 to 40 degrees Beaume scale, are refinery products and when furnished by a reliable company will be found free from acid, grit or anything that will tend to destroy the cylinder. They are all inexpensive and easily obtainable. The simplicity of the Giant has been greatly enhanced by the elimination of valves, carburetors, magnetos, batteries and other complicated devices. As it stands today, this engine has been recognized by some of the foremost authorities as the simplest, most compact and economical oil engine on the market. Some of their reasons may serve to clear up some much-mooted questions concerning the superiority of different oil engine designs.

The Giant is a two cycle engine receiving an impulse every revolution of the flywheel instead of the more generally known four cycle type which receives an impulse every other revolution. The four cycle requires a much heavier fly-



Class A-DO Duplex Giant Semi-Diesel Fuel Oil Engine

wheel or higher speed than the two cycle, and in it the pressure driving the suction stroke is on one side of the bearings, while during the power stroke, it is on the opposite side. On the two cycle engine, the pressure is always in one direction. The bearings of the four cycle engine must be closely adjusted to prevent pounding, and gears, lay shafts, cams, valves, etc., must be used. As none of these parts are needed in the Giant two cycle engine, it is much less complicated, requires less attention and is much quieter in operation.

The hot plate form of ignition as used in the Giant engine has been found to be superior to the hot ball in a number of ways. Hot balls fill up with carbon and stop the engine, whereas hot plates do not. Hot balls burn out quickly and frequently burst, while hot plates are not subject to any bursting pressure and will not burn out as quickly. In any engine using hot ball ignition, the oil in being injected into the cylinder comes in contact with very little heated iron as compared with the hot plate method as used in the Giant. Because of the small heated surface of the hot ball, it takes much longer to gasify the oil, and consequently it must be injected into the cylinder much earlier in the stroke than when using a hot plate and liner. The earlier the oil is injected into the cylinder, the more danger there is of pre-ignition and excessive initial pressure. The rapidity of ignition in the Giant allows the fuel to be injected into the cylinder much later in the stroke, thereby avoiding the abnormal pressure incident to pre-ignition.

A plunger pump is used instead of a carburetor to inject oil into the cylinder of the Giant engine, because no engine in which oil is delivered to the cylinder through a carburetor can burn anything heavier than kerosene. When a carburetor is used, the fuel is carried into the cylinder and compressed with the air. In such an engine, the fuel while in the crank end of the cylinder is apt to be ignited when the transfer port

opens, and cause what is commonly known as backfiring. With the carburetor, electric ignition with its combination of batteries, magnetos, coils, spark plugs, wiring, etc., must be used, whereas in the Giant engine, no electric ignition is necessary. The ignition is automatic and there can be no pre-ignition because the oil is injected into the cylinder by a pump at the time ignition should take place. The plates can always be kept at a very high temperature and this will prevent late or no ignition.

Another difference in oil engine design lies in the use of the crosshead. In any two cycle engine not fitted with a crosshead, it is necessary to have the crankcase as nearly air tight as possible. Compression of air for scavenging the cylinder must be done in the crankcase, and if it is not tight, air will leak out and impair the scavenging, and hence the proper operation of the engine.

Certain advantages of the belt driven governor,—a feature of the Giant engine—over a shaft governor, may be enumerated. The extra length of shaft required when a shaft governor is used greatly increases the overhang of the flywheel and belt pulley. This overhang should be as small as possible. All the length of shaft needed when a belt driven governor is used is the width of the belt, which is much less than that required by the shaft governor. To change speed when using a shaft governor, the engine has to be stopped and the tension of the governor springs adjusted. When a belted governor is used, the speed of the engine can be changed while it is running and the desired speed quickly attained.

The oil engine as a means of reducing power costs is well established. Compared directly with the steam engine, it is found that the weight of the steam engine is much greater and that it requires much more headroom and floor-space than the oil engine. There is always a great waste of steam in producing a given horsepower and the delivery of power is always dependent upon the



Hauling a Giant Fuel Oil Engine under Difficulties. An 80-Horsepower Unit Just Arriving at the Butte Roller Mills, Butte, Nebraska.

skill of the operator. In addition to this, the operating expense of the steam engine is high because fires must be kept up whether power is needed or not, whereas an oil engine requires no fuel when the engine is idle. The broadening demand for oil engines has caused production to increase substantially, and so it is not surprising that among the many different types on the market there are many inefficient machines. This condition should lead the prospective purchaser to investigate the oil engine field thoroughly before making any contract. An investigation much like the one here outlined for the Giant engine, but covering not only features of design but of materials and workmanship as well, will go a long way toward helping to make the selection a wise one.

Reducing the High Cost of Living

The Congressman had received ten applications for pea-seed from one constituent, and when the eleventh came he wrote:

"I am sending you the seeds, but what in Heaven's name are you doing with so much pea-seed? Are you planting the whole state with peas?"

"No," came back the answer, "we are not planting them at all. We are using them for soup."

Twelve Horses Haul This Giant.

An 80 H. P. Giant Fuel Oil Engine was sold to the Butte Roller Mills, Butte, Nebraska. Unfortunately Butte is not on a railroad, being three miles from Anoka, Nebraska, the nearest railroad station. In due course the railroad delivered the engine to Anoka. The problem then was: How can it be hauled to Butte? As it weighed 28,000 pounds, ordinary means of conveyance would not be strong enough.

After various plans were considered and rejected, it was decided to hitch two strong wagons together tandem fashion and the engine so loaded as to distribute the weight over both of them. The outfit was then hauled by eight horses as shown in the illustration, although at times twelve horses were needed to overcome bad places in the road.

The trip was made from Anoka to Butte without incident, except that the county commissioners objected to the load being hauled over one of the wooden bridges on their route. The engine was hauled over, however, regardless of the commissioners' protests and although the bridge buckled up under the load, it straightened out again all right after the outfit had passed.



Asbestos Mine of the Arizona Asbestos Association.

Operating an Asbestos Mine with Fuel Oil.

Asbestos or Mineral Wool is one of the most mysterious and curious minerals known. It is unchanged by flame or by temperature of 1,500 degrees Fahrenheit. It defies erosion and wear. It resists the action of oxygen and acids. It is a non-conductor of electricity and insulates against heat or cold.

Asbestos is found in the form of rock, as heavy and dense as marble. When examined it is found to consist of a mass of silky fibres, a floss-like thistle down, so light it will float on water.

This wonderful mineral was not unknown to the heroes of ancient history. Charlemagne had a table cloth made of this substance and the great Khan had table napkins made from Asbestos. Today it has a wide variety of uses. It is made into great theatre curtains. It is spun into thread so fine that a hundred yards weigh but one ounce. It is woven into cloth like linen or into heavier fabrics as thick as a finger. Fire-proof clothing is now being made in large quantities from Asbestos.

It is combined with rubber for engine, pump or compressor packings and with cements to withstand fierce furnace

heats. It is made into shingles, roofings, brake lining, insulations, cements, electrical devices, tapes, yarns and hundreds of products that enter every avenue of science and the useful arts.

There are several Asbestos mines in the United States, one of the largest of these being owned by the Arizona Asbestos Ass'n, in Axle Creek Canyon, located about 40 miles northeast of Globe, Arizona.

This mine is now operating six rock drills, the air for which is supplied by a 14-9½x14" "Chicago Pneumatic" Simplex Valve Fuel Oil Air Compressor, which is furnishing them compressed air at a remarkably low cost. The location of the compressor is shown by Fig. 1 in the illustration. Fig. 2 shows the location of a 12 Horse Power Giant Fuel Oil Engine which operates the asbestos mill. We are indebted to Mr. N. A. Nelson, Supt., of the Arizona Asbestos Association for the photograph.

Willie was being measured for his first made-to-order suit of clothes.

"Do you want the shoulders padded, my little man?" inquired the tailor.

"No," said Willie, significantly, "pad the pants."



Drilling Holes in Concrete Floor with Duntley Electric Hammer Drill in Modern Method of Carpet Laying.

The M. H. Pickering Company of Pittsburgh, Pa., had the contract for furnishing carpets to be used in the City-County building of that city.

The floors of the City-County Building are constructed of concrete and in order to secure the carpets to the floors it was necessary to drill three-eighth inch holes into the floor about one and one-half inch deep, into which was inserted an expansion bushing of lead composition. This expansion bushing was hollow on the inside, into which was inserted a small brass ferrule flush with the floor. The carpets were then laid and tacks with brass heads about one

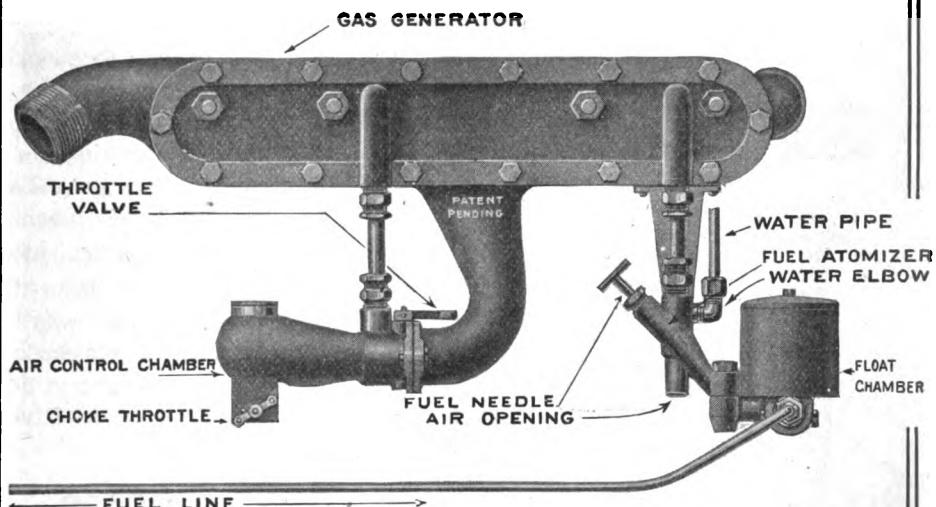
inch long were put through the carpet down into the brass ferrules to secure the carpet.

The drilling of the holes was a considerable problem as there were 60 rooms to cover with carpet, necessitating 90 holes in each floor. They started to do the drilling with an ordinary drill but found this too expensive on account of the abrasive effect the concrete had on the twist drills.

They then purchased a Duntley Electric Hammer Drill. This was fitted with a small star drill steel and the holes were put in the floor without any apparent effort whatever.

Operate Your Ford Car or Truck on Half Kerosene and Half Gasoline and Save Half Fuel Cost

GUARANTEED SATISFACTORY OR MONEY RETURNED



We guarantee the Duntley Gas Generator to save you 50% of your fuel cost.

It enables you to use a 50-50 mixture of gasoline and kerosene, or 75% kerosene and 25% gasoline, or straight kerosene, straight gasoline or distillate, or any mixture of hydro-carbon fuels.

It gives you more mileage per gallon. It increases speed.

It cools, cleans and protects your engine.

It does away with your carburetor and all carburetor troubles.

It distills your fuel and generates a gas of wonderful power and efficiency.

DUNTLEY GAS GENERATOR

No changes required except to remove carburetor and manifold
Shipped complete, ready to install. Price complete, \$35

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Chicago Pneumatic Tool Company
1615 MICHIGAN AVENUE

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Chicago

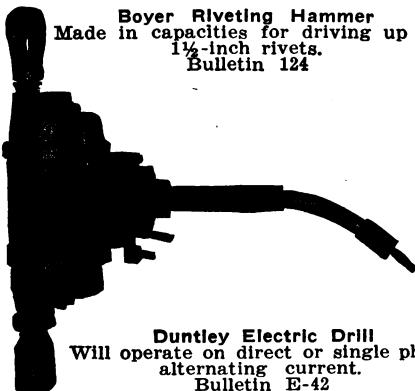
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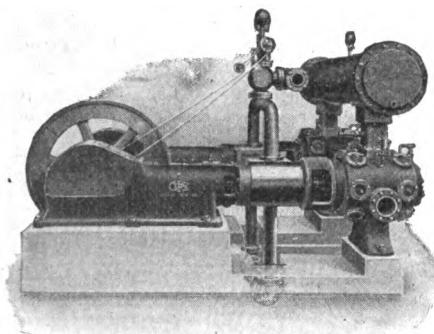
SPEED UP WITH PNEUMATIC



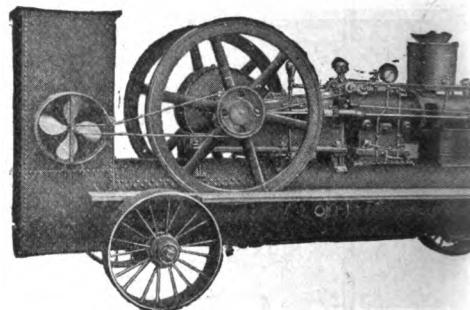
Boyer Riveting Hammer
Made in capacities for driving up to
1½-inch rivets.
Bulletin 124



Duntley Electric Drill
Will operate on direct or single phase
alternating current.
Bulletin E-42



Class O-DSC Chicago Pneumatic
Simple Valve Compressor
Regularly designed for 100 pounds
air pressure and relatively low-pressure
steam. Can be supplied in capacities
from 375 to 1,700 cubic feet.
Bulletin 34-M



Chicago Pneumatic Class N-SO
Compressor (tank mounted).

The Chicago Pneumatic Simple Valve Compressor (tank mounted) may be operated on Fuel Oil, Gasoline.

Direct connected, automatica
regulated, self-contained. Has in
dependent cooling system.

Made in four sizes from 71 cut
feet per minute to 300 cubic feet per
minute capacity.

Bulletin 34-K

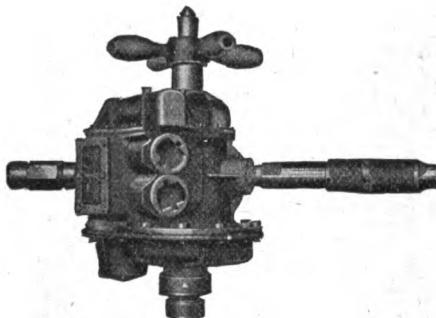
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CHICAGO PNEUM

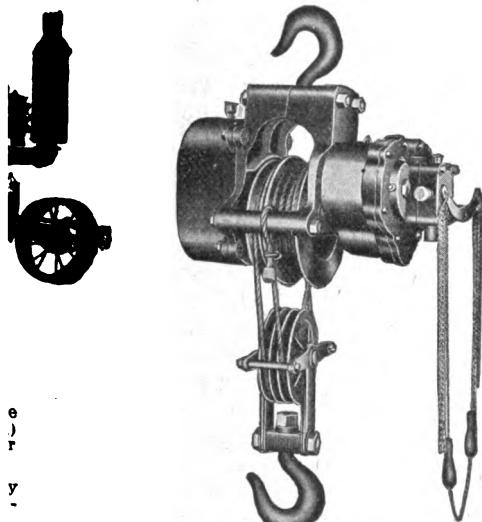
PRODUCTION ID ELECTRIC TOOLS

ping and Calking Hammers; Little Giant Air Drills and Grinders; Duntley Electric Drills, Hammers, Hoists and Grinders; Chicago Pneumatic Simple Valve Air Compressors; Giant Fuel Oil, Gas and Gasoline Engines; Hummer Hammer Rock Drills; Chicago Pneumatic Water Lift Pumps; and Little Giant Motor Trucks.

Write for Bulletins

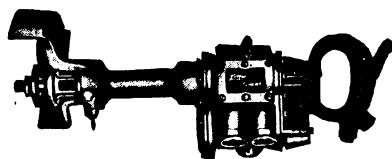


Ball Bearing Little Giant Drill
Furnished either reversible or non-reversible. Capacity, 2 inches.
Bulletin 127

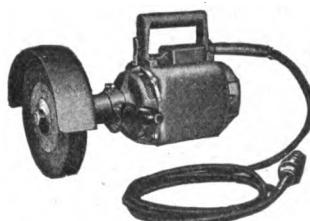


Chicago Pneumatic Geared Hoist.
Made in capacities from one to five tons.

Bulletin 132



No. 10 Little Giant Grinder
For light work, speed light, 4,200
R. P. M.
Bulletin 127



Duntley Electric Portable Grinder.
Ball bearing, operating on direct or
alternating current.
Bulletin E-39

INDUSTRIAL TOOL CO.

**52 Vanderbilt Ave.
New York**

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.
1014 FISHER BUILDING
CHICAGO, U. S. A.

C. I. HENRIKSON Editor

VOL. XII DECEMBER, 1917 No. 6

TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our
subscription list.

Buy Labor-Saving Machinery Now.

There is a labor shortage in this country right now and it has been with us for months. The labor shortage will certainly become much more pronounced as the draft continues. And that isn't all. Canada and France are both appealing for American laborers, and are getting some of them, too. They will get more later on. Our own military labors, back of the lines, will require skilled and unskilled laborers by the thousand.

Clearly this is the time for manufacturers and contractors to buy labor-saving machinery. Our labor shortage is probably only beginning. It will doubtless continue after the war and may very easily be worse then than now. It appears likely that more aliens will leave this country than will be replaced with immigrants at the close of the war. Europeans who survive the war will stay at home to rebuild their wasted cities and public works. Their countrymen who have been sojourning with us will go back home to help in the building of a new Europe, to visit and to view the ruins.

It is a safe forecast that we will have a labor shortage in this country for some years to come. In addition to what we have enumerated, new lands are being opened up which will be farmed after the war. Our growing foreign trade will keep on growing and will call for

more and more labor. We will also have our war losses.

American manufacturers and contractors have never had an easier decision to make than that they should buy labor-saving machinery now.

**Sons of President and Treasurer
Have Enlisted.**

Crawford A. Duntley, son of President W. O. Duntley of the Tool Company, and LeRoy Beardsley, Jr., son of LeRoy Beardsley, Treasurer of the Tool Company, are enlisted in Uncle Sam's service. Mr. Duntley is a sergeant in the ordnance detachment, Rock Island Arsenal, and Mr. Beardsley is in the coast guard service, stationed at Ft. Trumbull, New London, Conn.

The United States and the Stars and Stripes.

Long may they prosper and wave, continuing faithful to the inheritance left by the fathers of the Republic; gathering into the bosom of the great family, the children of all nations; adding to her territory, not by the sword of the soldier, or the subtlety of the statesman, but by the diffusion of her principles, and the consonance of her simple laws and institutions, with the good sense and purer aspirations of mankind. Long may they prosper, each year adding to her stock of strength and dignity and wisdom; and high above her countless fleets and cities, even to the last generation may the monument of her liberty be descried, in the darkest storms which now shake the thrones and dynasties of the old world; long may they stand unscathed in the bleakest night which falls upon the arms of a determined people; may they shine forth like the cross or the star in the wilderness, and be to all an emblem of hope, a shrine of independence, and a signal of salvation.

SITUATION WANTED—Position wanted by experienced man. Has filled positions as general foreman and general superintendent. Understands foundry work. Fully understands the repair and maintenance of air compressors and pneumatic tools. Thirty-five years with one employer. Supervised work of large number of men. Address Ideal Power, Ad. No. 25.

Roll of Honor

THE following employees of the Chicago Pneumatic Tool Company have joined the colors and have pledged themselves to bring glory to the Stars and Stripes in the world war for democracy.

GENERAL OFFICE

BRYANT, GEO. F.
GILES, F. E.
HOPPE, A.
JOHNSON, NORMAN
KITTOE, K. H.
PUNNETT, T. R.
SCHUSTER, I. S.
STALEY, M. L.
SWEENEY, E. F.
WAIT, CONANT
WOOLF, PERCY (British Navy)

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ANDERSON, EARL
BARBERI, JOHN
ELLERHOLZ, WALTER
FABER, ORIN
JABLOWSKI, STEVE
MULHOLLAND, JAMES
PAGE, HARRY
STALKER, JESSE

ERIE OFFICE

SMITH, G. R.

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BRUNDAGE, P.
DILL, W.
ERVIN, R.
GREINER, R.
HERMAN, STEVE
KORDECK, E. L.
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MEYERS, C.
MEYERS, J.
MORTON, V.
NEAL, N.
PEDDYCORD, M.
RODDY, R.
SATTOZALEIN, D.
VAN KEUREN, LEE

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ALLEN, GEORGE
BROWN, WM. B.
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COTTERMAN, FLOYD
COX, F. S.
DAILEY, MAX
FELT, RUSH
HOFFMAN, COULTER H.
HOFFMAN, REX
JOHNSON, HARRY J.
JOHNSON, HARRY W.
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GRANGER, F. E.
MITCHELL, E. C.
STEPHENSON, L. P.



"The Little Giant does everything that comes up," said the storekeeper of a prominent railroad. "If there is a car around the yards that has a small supply of freight, the truck takes care of it rather than switch the car back and forth through the yards. If castings are needed or a ton and a half of material, the Little Giant is employed to do this work. It cuts out hiring three wagons and gives the railroad complete control of the service. It has made itself indispensable because of the many tasks it performs that were not in the first place intended to be a part of its work. All of the supplies are brought down on this truck at a marked saving of time and expense."

Motor Trucks Will Supplant Freight Trains.

A press dispatch from Washington dated November 9th states that motor trucks are to supplant freight trains for hauls of less than 200 miles throughout the United States for the period of the war. The Council of National Defense has named a committee to co-operate with the railways, steamship lines and inland waterways in substituting trucks to this end and to aid state and national road commissions in providing roads for this transportation.

Members of the committee are: Roy D. Chapin, chairman, president Hudson Motor Company; Logan Walter Page, Department of Agriculture; Henry C. Shirley, chief engineer state roads commission of Maryland, and George H. Pride, president Heavy Hauling Company, New York.

A committee of automobile manufacturers, co-ordinating the automobile fac-

tories of the United States in war work, was also named as follows: Alfred Reeves of New York, Hugh Chalmers, John R. Lee and K. W. Copeland of Detroit.

The Busy Wop

An Italian, having applied for citizenship, was being examined in the naturalization court.

"Who is the President of the United States?"

"Mr. Wils'."

"Who is the Vice President?"

"Mr. Marsh'."

"If the President should die, who then would be President?"

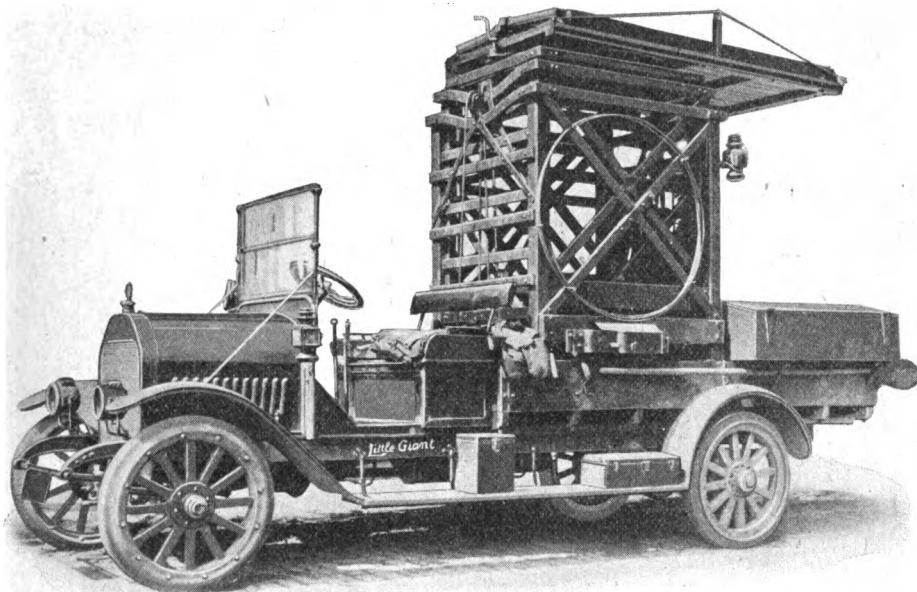
"Mr. Marsh'."

"Could you be President?"

"No."

"Why?"

"Mister, you 'scuse, please. I vera busy worka da mine."



Little Giant one-ton truck, owned by the Cleveland, Painesville and Eastern R. R. Co., fitted up as a trouble truck. This apparatus is designed to open up to the height necessary to repair a trolley wire and telescopes to size shown. It has been in operation at Willoughby, Ohio, for some time. They also have a trolley car equipped the same way but the Little Giant is able to get over the ground more quickly, as it does not have to pass cars on switches nor interfere with the schedule of the road.

Enlarging the Sphere of the Motor Truck.

A report dated November 23 states that an army truck train route from the central west will be established soon to move war supplies to seaboard. Development and co-ordination of transportation facilities to relieve congestion in moving war supplies, including the proposed truck route, are being worked out between the national defense council of the quartermaster general of the army, the shipping board, and the transportation systems of the country.

The problem of moving war supplies to equip the army at home and the forces in Europe is already too heavy for the railroads and congestion of traffic is increasing. The new motor truck transport route is designed to relieve the eastward freight movement, and steps to inaugurate it will be taken immediately.

The production of 10,000 motor trucks for internal transportation purposes is

now under consideration by the government.

A pathfinding automobile has left a middle western city to map out a practicable route to the Atlantic seaboard.

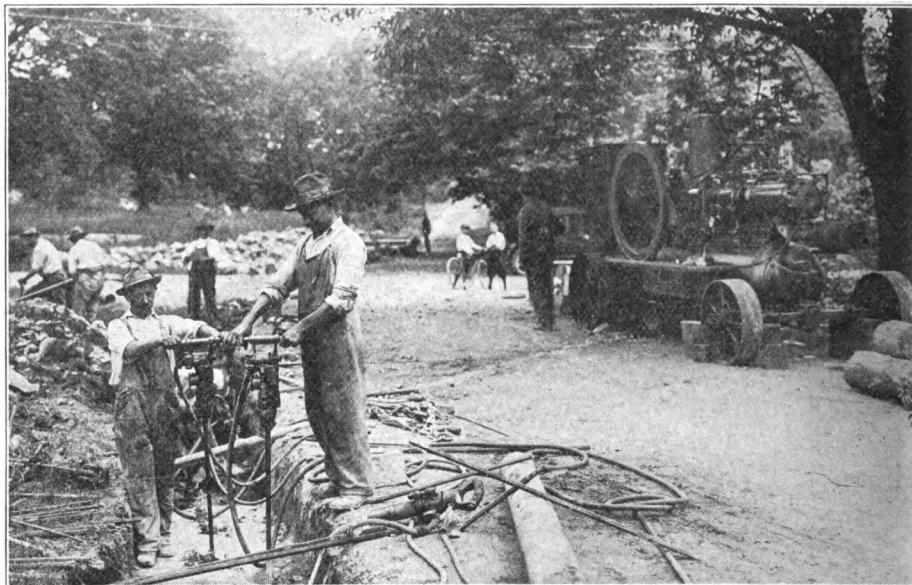
When the trains are placed in operation they will consist of thirty-four trucks, including twenty-seven cargo carriers, two gasoline tankers, one baggage truck, one field kitchen, a repair truck, an officers' car, and two motorcycles. There will be one lieutenant and seventy-six enlisted men attached to each train.

Explicit.

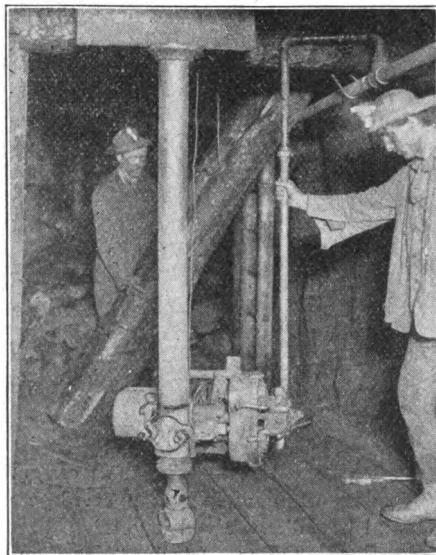
Country Lady—"I've been expecting a packet of medicine by post for a week, and haven't received it yet."

Post Office Clerk—"Yes, madam. Kindly fill in this form, and state the nature of your complaint."

Lady—"Well, if you must know, it's indigestion."



Hummer Drills at work digging trenches into solid rock for water mains for the Hackensack Water Company, Hackensack, N. J. A Chicago Pneumatic Portable Gasoline Driven Air Compressor is supplying air. The combination of a Chicago Pneumatic Portable Compressor with a battery of Hummer Self-Rotating Hammer Drills cannot be beaten on work of this character and builders of water works are rapidly adopting them as standard equipment.



Chicago Portable Mine Hoist mounted on column hoisting timber from main level to intermediate levels above, Caspian Mine, Iron River, Mich.

CHICAGO PORTABLE MINE HOIST

The Portable Mine Hoist, while designed especially for use in mines, has a very wide range of usefulness in construction and contracting work of all kinds. In mining work it solves the problem of economically raising and lowering timber and rock in raises, winzes and stopes. It will haul cars in drifts and tunnels and lower Rock Drills, mountings and drill steel from level to level. In construction work it is a general utility device, raising and lowering machinery and materials quickly and safely, and can be set up or torn down in a few minutes.

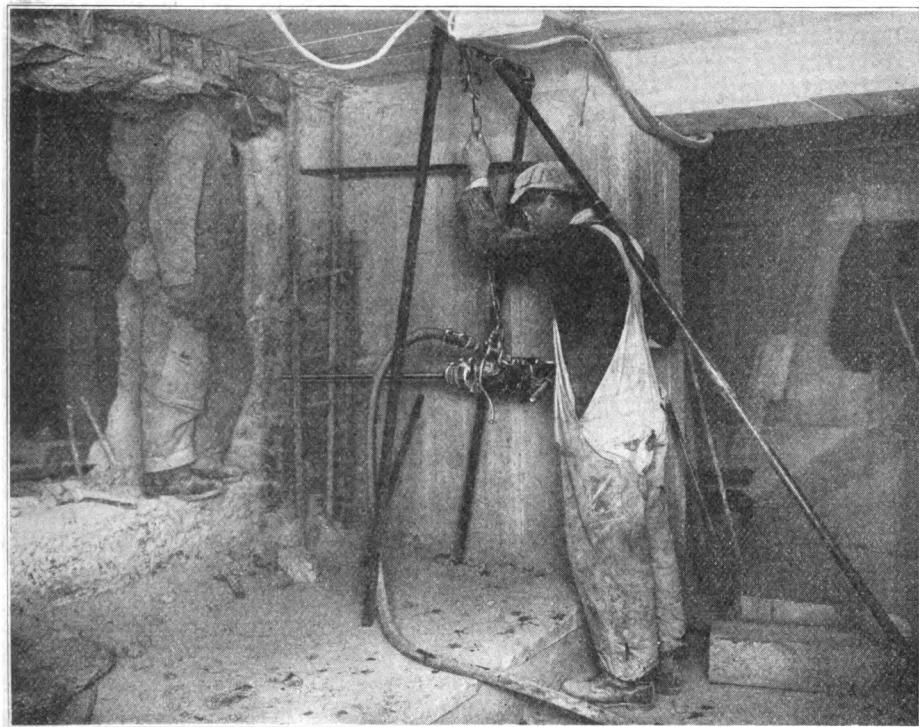
Bulletin 149 gives all details—Send for it and get our prices.

Chicago Pneumatic Tool Co.

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CHICAGO NEW YORK
Branches Everywhere

When writing to advertisers please mention Ideal Power.

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Scene showing B-66 Hummer Hammer Drill in use by the Hugh Nawn Construction Company, Boston, which is building the Boston subway extension. It is drilling through a concrete wall 3 feet 6 inches thick. The hole through the wall was made in 30 minutes and 30 seconds.

Unintentional Oversight.

Two lawyers before a country justice recently got into a wrangle. At last one of the disputants losing control of his temper, exclaimed to his opponent: "Jim Rogers, you are the biggest jackass I ever set eyes upon!"

The justice pounded the desk and called loudly: "Order! Order! You seem to forget that I am in the room."

Ripe.

Waiter, (watching customer who had ordered boiled eggs): "Weren't they boiled long enough?"

Customer: "Yes, but not soon enough."

Essay by Willie on the Income Tax.

I got a dog. His name is Tax. I opened the door and income Tax.

All For Nothing.

A woman entered a Chicago savings bank and placed \$50 in front of the teller. He pushed out the book for her signature and said: "Sign on this line, please."

"Me whole name?"

"Yes, ma'am."

"Before Oi was morried?"

"No, just as it is now."

"An' me husband's name too? May the saints rist him in glory!"

"You should sign your name Mrs., followed by your husband's name; or Mrs., your Christian name and then your husband's name; or Mrs., and your husband's full name; or, you might simply sign your Christian name and your husband's surname. Write it as you are in the habit of signing it."

"Oi can't wroite."



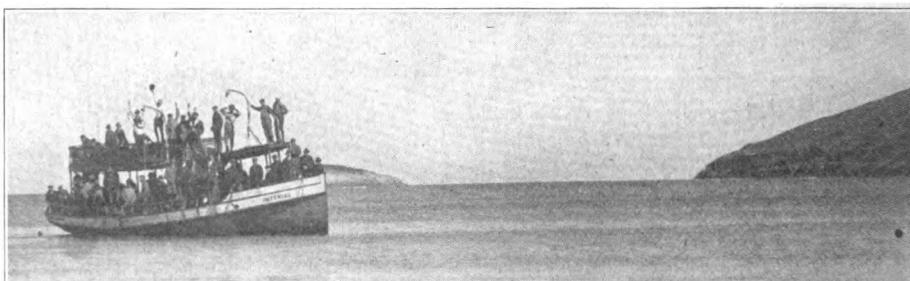
Little Giant Picnic Party on Catalina Island—Demonstrating a Remarkable Spirit of Camaraderie and Proving it is Possible to Mix Pleasure with Business.

A Little Giant Picnic.

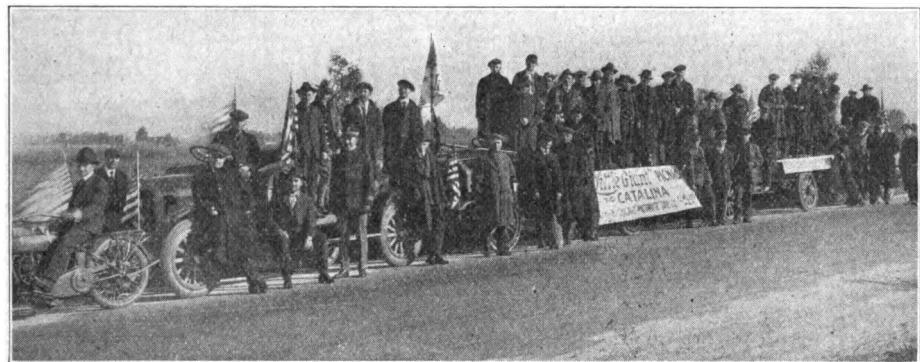
Although it is true that "business is business" this does not mean that business need be entirely devoid of sentiment and pleasure. Mr. H. L. Miller, who represents the Little Giant motor truck on the Pacific Coast, although a keen business man, has been gifted with the knack of mixing business and pleasure in just the right proportions to get the most out of each. His latest stunt was to organize a Little Giant picnic for 75 Little Giant truck owners, drivers,

and boosters. The trip was made from the Little Giant garage in Los Angeles to San Pedro, California, in Little Giant trucks, it requiring two Model 16, one Model 15, and one Model H to carry the party and provisions. The trip from San Pedro to Catalina Island was made on the boat "Imperial." The following account of the trip is given in Mr. Miller's words:

"All parties were on hand at the Little Giant Garage at 6 A. M., and at 7:30 we were at San Pedro, at which place the



My Good Ship "Imperial" with Little Giant Picnic Party Aboard—on the Way to Catalina Island—Pacific Coast Distributor H. L. Miller's Idea of "Driving Dull Cares Away."



Little Giant Picnic Party on Way to San Pedro where they Embarked for Catalina Island. A Bunch of Little Giant Enthusiasts off for a Good Time.

Imperial was waiting for us. All provisions were loaded on while our five-piece orchestra played 'Aloha.'

"Mr. Teddy Hobgood was unanimously elected Captain of the boat and appeared on the scene in a Captain's uniform.

"Our provisions consisted of plenty of beans, sandwiches and such items as are considered necessities at a picnic.

"The crowd had a most delightful time while crossing the channel, the band playing most of the time.

"We made a landing at the north end of the Island, at which point we were all taken ashore in the lifeboats and a group picture was taken. We had our lunch at this point and after fishing the balance of the day near the small islands, we returned in the evening to San Pedro and thence to Los Angeles.

"About five hundred pounds of deep sea fish were caught, which made an ample supply for all those aboard.

"After we had returned to the city, everyone expressed his appreciation of the excellent time he had and gave three rousing cheers for the Chicago Pneumatic Tool Company and Little Giant Trucks. They especially request that we have another party at an early date."

Try This On Your Ukelele.

Good salesmanship is selling goods that won't come back to customers that will.

Operate Little Giant Trucks on Kerosene.

Irwin Bros., of Chicago, have the contract for supplying the Great Lakes Naval Training Station at Lake Bluff, Illinois, with meats and provisions. In order to take care of this business, they make three trips a week from Chicago, using Little Giant two-ton trucks, equipped with the Duntley Gas Generator. The round trip from Chicago to Lake Bluff is eighty miles. They use a fuel mixture of 60% kerosene and 40% gasoline, and make the round trip over severe grades and rather poor roads, on an average of ten miles per gallon of fuel, at an approximate cost of \$1.06 for fuel for the trip. They confess that the truck making this trip is frequently overloaded as it carries nearer three tons than two tons.

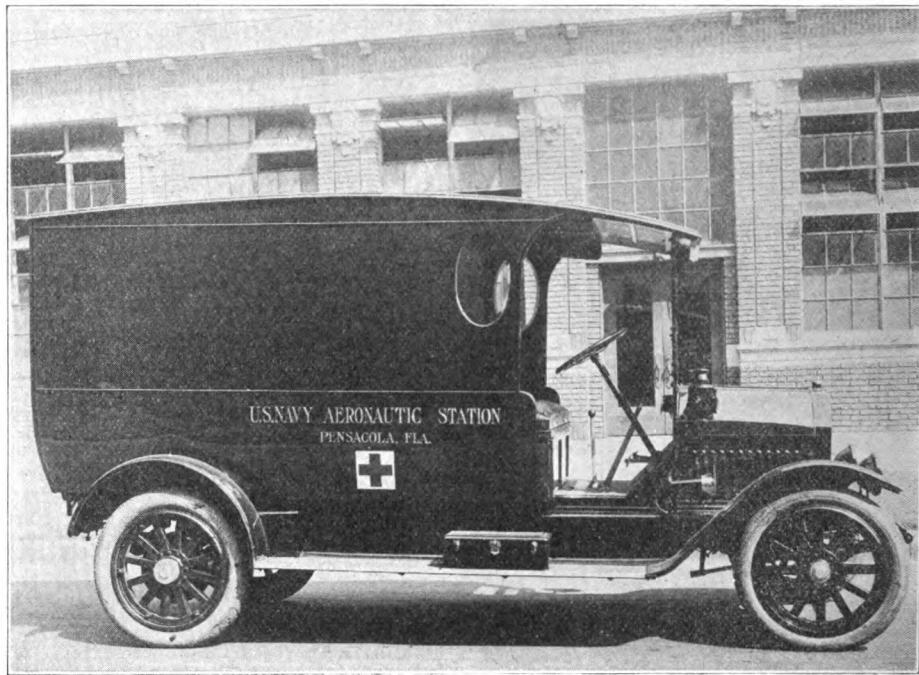
The day of kerosene as a motor fuel has arrived. Hundreds of Little Giant trucks are proving it in all parts of the country.

Above the Footlights

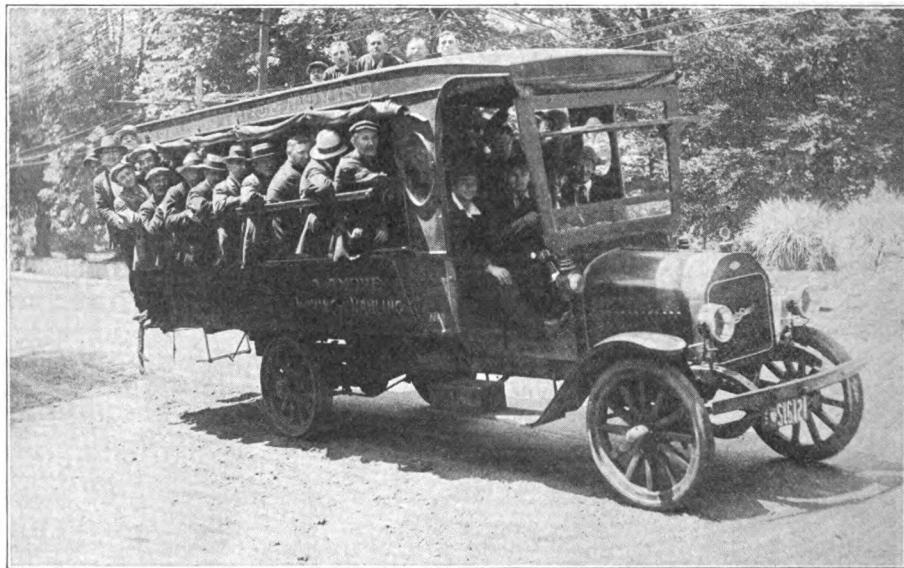
"Ever notice the expression on the ballet dancer's face?"

"No!"

"Look at it the next time!"

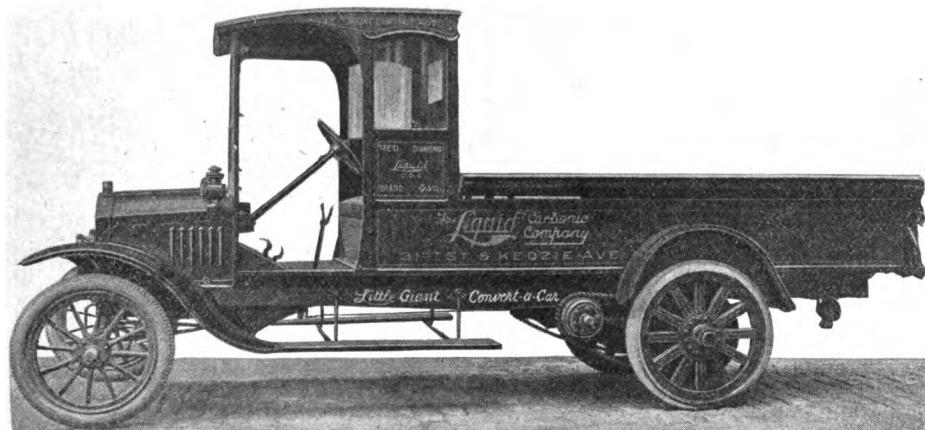


A Model 15 Little Giant in the Ambulance Service at the United States Naval Aeronautic Station, Pensacola, Florida.



A BUSY LITTLE GIANT IN BUS SERVICE

A Model 16 two-ton Little Giant hauling 45 passengers on a trip from Sixtieth and Market streets, Philadelphia, over the Chester Pike to Eddystone, dropping these workmen off at the Remington Arms plant, Baldwin Locomotive works and other plants. It makes this 14-mile trip four times in the morning and four times at night, hauling both the day and night shifts to these plants.



Little Giant Convert-a-Car Used by the Liquid Carbonic Co., Chicago. The Little Giant Convert-a-Car is the Only Ford One-ton Unit Built by a Truck Manufacturer

California—the Automobile State of the Union.

Citizens of the Golden State pride themselves with reason on their progressiveness. This is emphatically shown in the latest automobile statistics from California. Counting motor trucks and pleasure cars they show the astonishing total of 275,000 machines. For the state population of 2,750,000 people, this means a machine for every ten persons, counting men, women and children. San Francisco has 26,000 machines while Los Angeles has 76,000 machines.

Telephones Unknown in Rural Ireland.

Patrick, lately over, was working in the yards of a railroad. One day he happened to be in the yard office when the force was out. The telephone rang for some time, before Pat came to the conclusion that it ought to be answered. He approached the instrument cautiously, and slowly put the transmitter to his mouth, as he had seen the "boss" often do.

"Hello, there," he called.

"Hello," answered some one at the other end, "is this eight-six-ought-four-eight?"

"Aw, g'wan; phat d'ye think Oi am, a box car?" replied Pat.

Queer Girls.

The modesty of Fanny Fee
Leaves Dolly's far behind,
For if a man is looking she
Won't even change her mind.

—Detroit Free Press.

What would you say of Kitty Cooke?
Her plight was most distressing.
She feared to serve her salad, lest
Her guests would see her dressing.

—Auto-Suggestion.

Innocent Ida of Oneida

Who never did things by halves
Couldn't abide a bareback rider,
Nor the stock show's display of calves.

W. P. P.—Ideal Power.

Sweet Marie of Kankakee,

Her innocence well proved,
Could never be around to see
A transmission belt removed.

—M. S., Franklin, Pa.

(Further contributions invited.—Editor)

The Function of the Stomach.

The teacher was examining the class in physiology.

"Mary, can you tell us," she asked
"what is the function of the stomach?"

"The function of the stomach," the little girl answered, "is to hold up the petticoat."



Home—the burying-place of our manners.

Money is like seed. It does you no good unless you scatter it.

A fellow with ladylike manners is seldom chosen to fill a man's job.

It isn't so much what you do that wins success as what you avoid doing.

Men are like wells. The deeper they are the harder it is to pump them.

The meek will of necessity have to inherit the earth—if they ever get it.

Some fellows would rather find a mistake on the boss than get a ten dollar raise.

There is only one advantage in borrowing trouble, you never have to return it.

An amateur is a very young person who believes he keeps all the professionals grieving.

One swallow doesn't make a summer, but one swallow too much often produces a fall.

The difference between a skin-deep beauty and the other kind is that you get the other kind at the drug store.

Clothes don't make the man, but a seedy suit on a bright chap is a pretty good indication of misdirected effort.

Real heroes act as their own press agents.

Even if the worm does turn what does it benefit him?

A man of letters may be jealous if his wife gets a few.

Give some people their pick and they will pick flaws every time.

Let's not be overanxious to grasp an opportunity that is too hot.

He who thinks only of himself hasn't any too much to think about.

Many reputations blow up when a political campaign is in full blast.

Political strife isn't very far from what a famous general once said war was.

We all have a soft spot in our heads at birth—and some of us never lose it.

Many a man would feel like a fish out of water if by chance he should manage to get out of debt.

One shouldn't get discouraged because he is unable to answer a child's questions. There are others.

A nice thing about being a millionaire is the anxiety of all the merchants to sell you goods on credit.

An old bachelor says that the vocalizing at a wedding is even more depressing than the singing at a funeral.

The Chicago Pneumatic Tool Co.

MANUFACTURERS OF THE FOLLOWING

PNEUMATIC TOOLS, APPLIANCES, ETC.

After Coolers	Hammer Drills, Electric
Air Compressors	Hammer Drills, Pneumatic
Air Injectors	Hammers, Riveting
Air Motors	Hammers, Chipping and
Air Receivers	Calking
Air Jacks	Hammers, Stone
Air Lifts	Hoists, Duntley Electric
Airoilene Oil	Hoists, Pneumatic Geared
Airoilene Grease	Hoists, Straight Lift
Angle Gears, Boyer	Holders-on
Automatic Oiling Devices	Hose, Special High Grade
Chucks, Drill	Hose Clamp Tool
Chucks, Expanding	Hose Couplings (Universal)
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Drills, Hummer Hammer	Railway Motor Section
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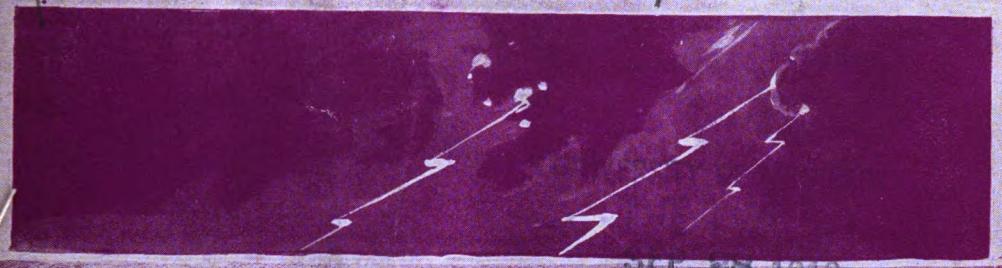
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SEPTEMBER, 1918

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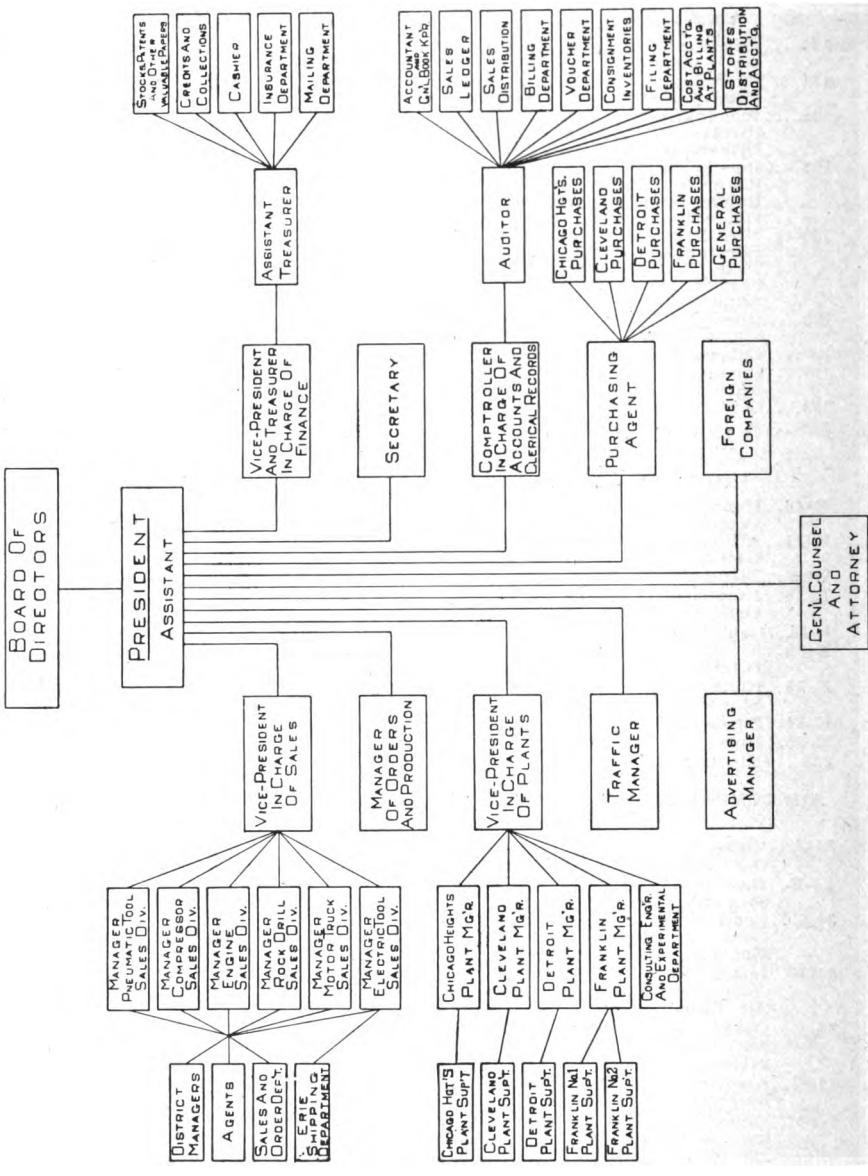
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PLAN OF ORGANIZATION OF CHICAGO PNEUMATIC TOOL CO.

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By CHICAGO PNEUMATIC TOOL COMPANY
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VOL. XII

SEPTEMBER, 1918

No. 7

CHICAGO PNEUMATIC TOOL COMPANY REORGANIZATION

In the reorganization plans of the Chicago Pneumatic Tool Company, officials have been elected and appointments made as follows:

H. A. JACKSON—*President.*

W. P. PRESSINGER—*V. P. in charge of Sales.*

W. H. CALLAN—*V. P. in charge of Plants.*

J. L. PRICE—*V. P. and Treasurer, in charge of Finance.*

H. D. MEGARY—*Asst. to President.*

W. B. SEELIG—*Secretary.*

J. U. BLANCHET—*Comptroller.*

C. H. HAESELER—*Consulting Engineer.*

R. S. BAKER—*Auditor.*

G. A. REES—*Purchasing Agent.*

W. A. MITCHELL, 141 Broadway, New York—*General Counsel.*

KNAPP & CAMPBELL, Chicago—*General Counsel.*

J. G. OSGOOD—*Manager Pneumatic Tool Sales Division.*

C. B. COATES—*Manager Electric Tool Sales Division.*

H. L. DEAN—*Manager Compressor Sales Division.*

B. R. HAWLEY—*Manager Engine Sales Division.*

ERNEST EKLUND—*Manager Rock Drill Sales Division.*

T. J. HUDSON—*Manager Motor Truck Sales Division.*

C. I. HENRIKSON—*Advertising Manager.*

A. G. LA PIERRE—*Traffic Manager.*

L. C. SPRAGUE—*District Manager of Sales, New York.*

F. S. EGGLESTON—*District Manager of Sales, Boston.*

ROSS WATSON—*District Manager of Sales, Buffalo.*

G. A. BARDEN—*District Manager of Sales, Philadelphia.*

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F. H. WALDRON—*District Manager of Sales, Minneapolis.*

B. H. TRIPP—*District Manager of Sales, San Francisco.*

C. W. CROSS—*Special Representative.*

L. E. SUMMERS—*Manager Detroit Plant.*

H. J. KIMMAN—*Manager Cleveland Plant.*

ROBERT DE SCHAUM—*Manager Chicago Heights Plant.*

E. H. CROSSEN—*Manager Franklin (Pa.) Plants.*

W. J. LAVERY—*Asst. Treasurer.*

J. O. BOWEN—*Credit Manager.*

H. S. HERIN—*Asst. Credit Manager.*

F. C. STRUBING—*Cashier.*

The plan of the new organization is shown on the opposite page.

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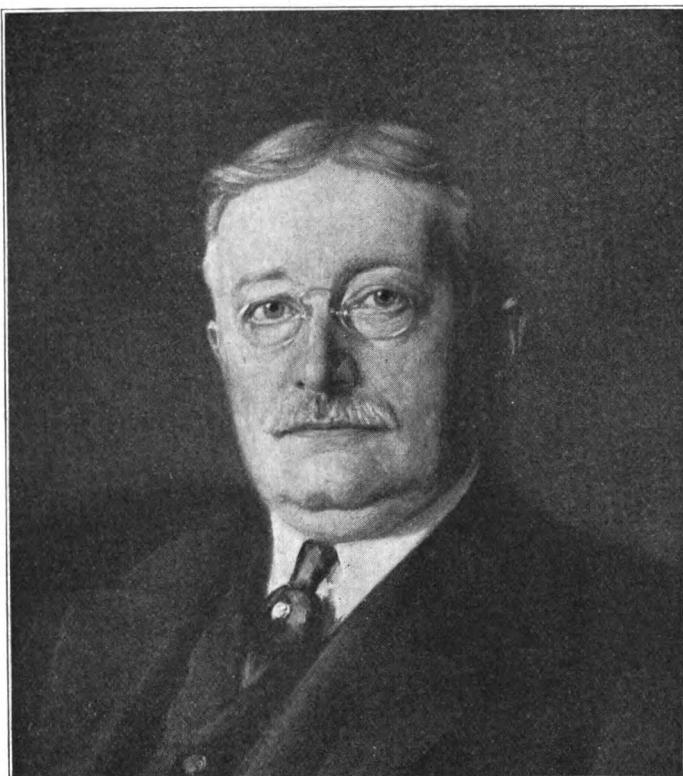
Charles M. Schwab, Director General Emergency Fleet Corporation.

Mr. Charles M. Schwab, who as Director-General of the Emergency Fleet Corporation, has perhaps the biggest job ever tackled by an executive, has always been a large stockholder in the Chicago Pneumatic Tool Company and under its new administration which is of his own selection, is taking a very active interest in its affairs.

Mr. Schwab is the master shipbuilder of today because he knows how to get results. Coupled with his great executive ability is a profound knowledge of

human psychology, and his optimism and magnetic personality are leaving their mark upon the conduct of the war and the industrial history of our times.

"If a man isn't susceptible to praise," says Mr. Schwab, "there is not much hope for him. Deny credit to the man who makes good and he will feel there is not much use in making good. My idea is to place the responsibility upon the man who is to do the job, then encourage him, and finally give him full credit when he does make good."



John R. McGinley, Chairman of the Board, Chicago Pneumatic Tool Co.

Mr. John R. McGinley, who is Chairman of the Board of Directors of the Chicago Pneumatic Tool Company, is so well known that an extended introduction is not necessary. He has been an official in the Westinghouse Company for over twenty-five years. He is Chairman of the Board of Directors of the Pittsburgh Screw & Bolt Company, and

in the same capacity he also directs the affairs of the Gary Screw & Bolt Company. He is President of the Duff Manufacturing Company of Pittsburgh. Mr. McGinley is a director in a number of banks and industrial concerns. Among the latter are the Pool Engineering Company and the Westinghouse Air Brake Company.



H. A. Jackson, President, Chicago Pneumatic Tool Co.

Mr. H. A. Jackson, newly elected president of the Chicago Pneumatic Tool Co., was born in Bethlehem, Connecticut, July 7th, 1881. He is a graduate of the Lawrence Scientific School of Harvard University, Class of 1903, but devoted an additional year to a special course in metallurgical work in the Graduate School there.

He entered the employ of the Bethlehem Steel Company in July, 1904, where he served an apprenticeship in the various departments of the works, thus gaining valuable practical experience and an intimate acquaintance with the steel business by personal contact with the production end. He later entered the sales department of the Bethlehem organization. From that time his advancement was steady and constant.

A number of years ago Mr. Jackson was sent to Boston to open the Beth-

lehem Steel Company's office there and to organize their sales and executive forces in that territory. How well these duties were performed was best proved by the fact that the Boston Office ranks among the best in the company's organization.

During his early career in the sales end of the Bethlehem Company he was sales agent in Chicago for some months.

Mr. Jackson comes to the Chicago Pneumatic Tool Company with a ripe experience in the steel business and an intimate acquaintance in fields of endeavor closely related to those of his new affiliation. His entire experience was built upon the broad and firm foundation of a fundamental university education, supplemented by practical experience at the furnace and forge, in shops and in sales.



W. P. Pressinger, Vice-President in Charge of Sales,
Chicago Pneumatic Tool Co.

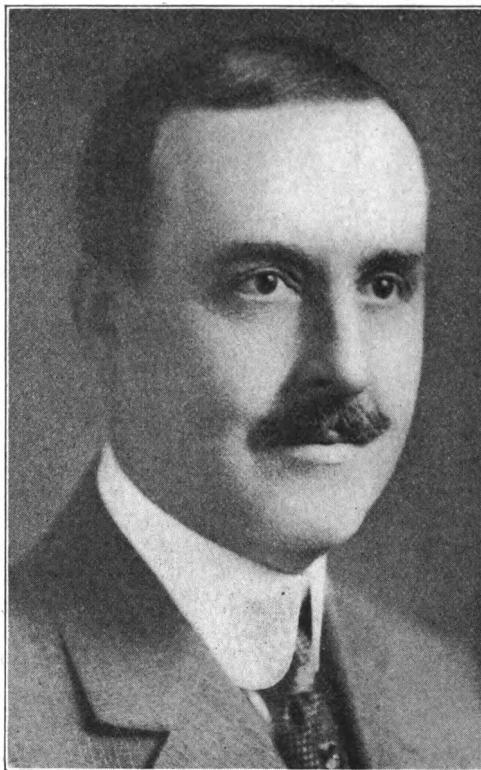
Mr. W. P. Pressinger, Vice-President, in charge of sales, was born in New York City, and as a young man entered the employ of the former Clayton Air Compressor Works of New York, remaining with that company for thirteen years, with the position of Manager of Sales during the latter years.

In 1900 Mr. Pressinger organized the New York Air Compressor Company, of which he became General Manager. Soon thereafter Mr. Pressinger took part in the organization of the Franklin Air Compressor Company of Franklin, Pennsylvania, the interests of the New York and Franklin Companies being merged.

Later, upon the formation of the present Chicago Pneumatic Tool Company,

the New York and Franklin Air Compressor Companies became a part of that organization, and Mr. Pressinger assumed the duties of General Manager of the Compressor Department, with headquarters at New York. In 1915 he removed his headquarters to the general offices of the Company in Chicago, upon the expansion of his department to include the rapidly growing internal combustion engine business of the Company.

Upon his recent election to his present position as Vice-President, he took over the management of the entire sales of the Chicago Pneumatic Tool Company in all divisions. Mr. Pressinger is a member of the American Society of Mechanical Engineers and the Sons of the Revolution. He is also President of the Compressed Air Society.



W. H. Callan, Vice-President in Charge of Plants, Chicago Pneumatic Tool Co.

W. H. Callan, Vice-President in charge of Plants, was born in Lockport, New York, December 17, 1872. He received his early education and technical training in that locality, after which he made a rather extensive tour of the middle and western states, familiarizing himself with the best production methods employed by some of the leading concerns in this country, and in 1901 connected with the Franklin Air Compressor Company. Soon after, this company was taken over by the Chicago Pneumatic Tool Company, and Mr. Callan made shop superin-

tendent, in which position he remained until 1910. He then resigned to accept a more lucrative position in the same capacity with the Venango Manufacturing Company of Franklin, remaining in this position until 1913, when he resigned to become General Manager of the Franklin Plant of the Chicago Pneumatic Tool Company, in which position he remained until June 1st, when he was placed in charge of plants of this company with headquarters at Chicago. Following his removal to Chicago he was made Vice-President in charge of plants.



**Jacob L. Price, Vice-President and Treasurer,
Chicago Pneumatic Tool Co.**

Jacob L. Price, Vice-President and Treasurer in charge of finances of the Chicago Pneumatic Tool Company, was born in Springfield, Illinois, and attended the public schools in that city. He was just completing a legal education when he was offered a position in a bank where he spent four years, obtaining thereby perhaps the best education which a young mind with a leaning toward financial matters could have received.

Mr. Price was for many years con-

nected with Armour & Company in various executive and financial capacities. He was for about five years President of the Stock Yards National Bank of Fort Worth, Texas, which is also an Armour interest. Later he was associated with the Atlantic National Bank of New York City.

Mr. Price is in charge of financial affairs of the company and brings to it a wide acquaintance in banking and industrial circles.



H. D. Megary, Assistant to President,
Chicago Pneumatic Tool Co.

H. D. Megary, Assistant to President of the Chicago Pneumatic Tool Company, was born in Philadelphia, Pennsylvania, April 21, 1888.

After preparing at the Penn Charter School in Philadelphia, he entered the University of Pennsylvania, where he pursued the Commercial and Financial Course of the Wharton School.

Upon completion of this course in 1909, he entered the employ of the Bethlehem Steel Company, with which company he has remained until this time.

While at Bethlehem, Mr. Megary became familiar with the steel business in general through work which identified him with the various important departments of the operating end of the business, and later with the cost, production, executive and sales.

He therefore comes to the Chicago Pneumatic Tool Company with an experience and training which admirably fit him for the very important duties he assumes.

What Makes Up An Airplane.

The following list of materials for an airplane of simple type, exclusive of engine, has been tabulated by the Signal Corps, says the Timberman:

Nails	4,326
Screws	3,377
Steel stampings	921
Forgings	798
Turnbuckles	276

Veneer, square feet	57
Wire, feet	3,262
Varnish, gallons	11
Dope, gallons	59
Aluminum, pounds	65
Rubber, feet	34
Linen, square yards	201
Spruce, feet	244
Pine, feet	58
Hickory, feet	1??
Ash, feet	31



J. U. Blanchet, Comptroller, Chicago
Pneumatic Tool Co.

J. U. Blanchet, Comptroller of the Chicago Pneumatic Tool Company, was born February 14, 1879, at Lotbiniere, Province of Quebec.

He was educated at the Commercial Academy of Montreal, Canada. After graduating from the Academy, he entered the employ of the Canadian Pacific Railway, in the Accounting Department, and remained with the Railway for seven years.

Subsequently, Mr. Blanchet entered the employ of the Metropolitan Street Rail-

way of New York, with whom he remained for a period of one year. He then became associated with Price, Waterhouse & Company, Chartered Accountants, in whose service he was employed for a period of ten years, and became the manager of their New York Division.

Mr. Blanchet's experience and training are such as to render him exceptionally well qualified to assume the various important duties devolving upon him in the capacity of Comptroller.

Another English Massacre.

From a New York paper: "Emily was a queer girl, and so, for that matter, was her father."

A Western bank announces: "We make the interest of our depositors our interest."

Newspaper on deceased financier:

"He is reputed to have made six million dollars in as many years."

Card of cleaning company: "Don't take the life out of your rugs by beating them. Let us do it in a more sanitary way."

Placard of a moving picture show: "Young children must have parents."

WINNING THE WAR WITH RIVETING GUNS

At Sparrow's Point recently, Charles Knight, colored, accomplished a feat which through the publicity it was given thrilled the shipbuilding industry all over the world and earned the commendation of Uncle Sam and his allies in our war against the Hun. Knight drove 4,875 three-fourth inch rivets, two and five-eighths inches long in nine hours, using two No. 90 Boyer Hammers alternately, at the plant of the Bethlehem Shipbuilding Company.

It is said that a modern steel ship requires from one-half million to a million rivets, and since the building speed of steel ships is largely dependable upon the rapidity with which rivets can be driven, Knight's feat was far reaching, and every riveter working on ships has striven to better or at least equal Charley Knight's record.

Quoting from the Baltimore American which described the event:

"Charles Knight, colored, living on Wolfe street, is the employe to break the record. He drove 4,875 three-fourth-inch snap rivets two and five-eighth inches long in nine hours. The previous world's record was held in Scotland, the total being 4,422, while the Maryland record was 2,720 by a riveter of Baltimore. This country's high mark was 3,085, held by another employe of Mr. Schwab at the Harlan and Hollingsworth plant at Wilmington, Del. The count made yesterday is official as it was witnessed by W. Tinsley, chief inspector United States Shipping Board, Joseph O'Keefe, Inspector for the same board; H. Mitchell, inspector, American Bureau of Shipping, and John Sheriff, inspector of Lloyd's Bureau of Shipping.

"At 4 o'clock, and with one hour to

go before quitting time, Knight had equalled the record set in Scotland.

"He kept two holders-on, three passer boys and two heater boys busy, and still he found time to get a breathing spell. He used two No. 90 Boyer Pneumatic hammers, alternating as soon as one became too hot for handling. He only rested one-half hour, and this was his usual lunch time. His average for the day was 541 2-3 rivets per hour, a shade over nine rivets per minute for the entire day. At noon he had driven 2,637 rivets, and in the afternoon he drove 2,238.

"Knight started to work at the usual time yesterday morning with the avowed intention of being the champion rivet driver of the world, and he rejoiced in thinking that in doing so he was doing his bit in helping to lick the Kaiser.

"At 5 o'clock he stopped work. Whistles blew and foremen and employes alike cheered him. Then he remarked: 'Oh, I will do better next time. This is the first time I tried to break records.'

"Statistics show that one rivet equals seven shots fired at the enemy. That being the case Knight fired 34,125 bullets yesterday. Those sharing in the honors were: Harry Holcomb and John Stewart, holders-on; George White and Clarence Bagley, heater boys and William Jones, Roosevelt Robertson and Joseph White, passer boys.

"Aside from any bonus Knight may receive for breaking the world's record he will receive \$102.36 for his day's work."

Recognizing the importance of riveting as an aid in winning the war, Donald MacLeod, London, a large ship owner, put up a prize of \$25.00 a week for four weeks to anyone driving the greatest number of rivets (size not mentioned), in a ship's side in a nine hour day, pro-



President Wilson Driving the First Rivet in the First Ship Built in the Shipyards of Alexandria, Va., in Many Years.
(Courtesy of International Film Service, Inc.)

viding the number of rivets driven exceeded the record of the Clyde riveter, Daniel Deviney, namely 4,422, and that of any subsequent allied international record in a shipyard. This prize was open to any British, American or Japanese riveter. Knight captured this prize.

While Knight's record is amazing, many other riveting gangs have made splendid records, since Uncle Sam started his "win the war" shipbuilding program.

In comparing these records one must

not be guided by the numerical count alone. There is a difference in rivets, in their sizes and styles of heads. There is variation in the amount of assistance given the riveter in performing his work. There is a difference between rivets driven horizontally and downward or upward, so that while one riveter may drive again as many as another the credit for rapid and efficient work may be equal when all conditions are considered.

Charles Schock drove 2,720 rivets in nine hours, at the Baltimore Drydock



The Prince of Wales Operating a Boyer Riveting Hammer. Britain Is Speeding Up Her Shipbuilding on the Clyde.

(Courtesy of Topical Press Agency, London.)

and Shipbuilding plant, Baltimore. These were three-fourths-inch button head rivets and were driven with a No. 60 Boyer Riveting gun.

At the plant of the Buffalo Drydock Company, Jno. Frazer drove 1,624 flush shell seven-eighth-inch rivets in eight hours and fifty-three minutes, using a No. 60 Boyer. This record was beaten a few days later by J. Starke who drove 2,098 flush shell seven-eighth-inch rivets in eight and three-quarters hours, using a No. 60 Boyer Riveter.

At the Quincy, Mass., plant of the Bethlehem Shipbuilding Co., Charles Mulham drove 2,805 three-quarter-inch oil-tight rivets in nine hours, using a No. 60 Boyer Riveter.

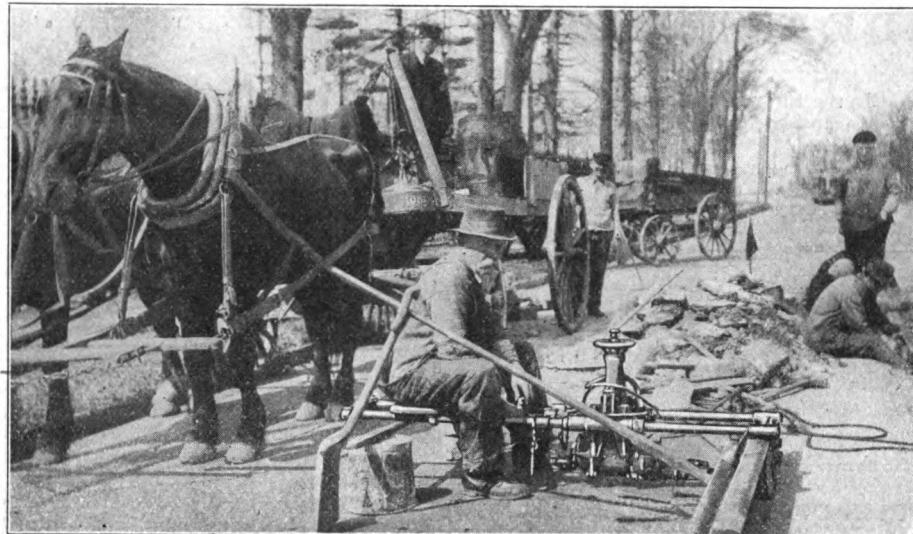
Tom Horn of the Moore Shipbuilding Company, Oakland, Calif., drove 5,620 rivets in nine hours. Of these 4,429 were seven-eighth-inch counter sunk and 1,191 were seven-eighths-inch snap. At the end of the day Horn was still fresh and said he felt sure with the experience he had gained in the day's work he would soon be able to materially beat his own

record, which he did a few days later—6,075 rivets in eight hours. It has not been unusual for Horn to drive between 2,500 and 3,000 rivets in an ordinary day. Horn's crew when establishing the record consisted of holder-on Salva and heater Causse and passer Estee.

On June 13th a new world record for bottom shell rivets was claimed for Martin C. Hahn who drove 1,875 rivets in seven hours and fifty minutes. He received \$33.00 for the day's work.

J. J. Briggs, riveter employed at the Atlantic Works, Summit Street, Brooklyn, N. Y., is said to have driven 7,864 seven-eighth-inch rivets in seven and one-half hours. The work was done on a Dutch ship undergoing repairs in Staten Island waters.

Driving 12,209 rivets in nine hours into a standard ship was the feat reported at the yards of Workman & Clark, Belfast, Eng., recently by John Omir, who beat the hour record for the United Kingdom. Omir is reported to have driven more than a thousand rivets every hour and on two occasions passed



A Little Giant Electric Track Drill at Work on Mt. Auburn St., Cambridge, Mass., Boston Elevated Railway Co. It Is Shown in Use on a Detached Rail, a Duty Which Track Drills Are Frequently Called Upon to Perform. Little Giant Electric Track Drills Are Fully Described in Bulletin E-52.

the 1,400 mark. In his best minute he drove twenty-six rivets. Omir used about two and one-half tons of metal.

The immediate result of the tremendous patriotic efforts of riveters in all shipyards, is already apparent in American shipbuilding activities. Until this year, if a steel ship was launched in ninety days it aroused comment from coast to coast. On April 20th, an 8,800 ton steel freighter was launched in Seattle at the Skinner & Eddy Company yards, fifty-five days after her keel was laid! A few days later a 5,500 ton steel ship was put in the water in the Camden yards of the American Shipbuilding Co., twenty-seven days after construction was started!

Uncle Sam has awakened. He recognizes his present job is to win the war and is preparing to achieve this result by using with tremendous effort all the latent talent he possesses.

[Editor's Note: Should we inadvertently have overlooked or misstated any pneumatic riveting records, it will be

our pleasure to make corrections or amends in our next issue. In submitting records for publication, please give size and style of rivets, in what part of ship driven, size of riveting gun and names of members of riveting gang. See prize offer made by the Chicago Pneumatic Tool Company on page 186.]

Nearly Perfect.

A Scottish farmer of a miserly disposition bought a horse at a fair. On the way home he thought a drink of water would refresh it, so he got a pail of water; but the animal would not take it. When he got home, he offered it a feed of corn; but to his surprise it would not touch that, either.

"Weel," he muttered to himself, "if only I was sure ye were a guid worker, ye're the verra horse for me."

Misunderstood.

Proprietor—Do you drink?

Applicant for Job—Thank you, sir. I'll have a small one.

—Judge.

IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air
and Electrical Appliances

BY THE

CHICAGO PNEUMATIC TOOL CO.

1014 FISHER BUILDING

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

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No. 7

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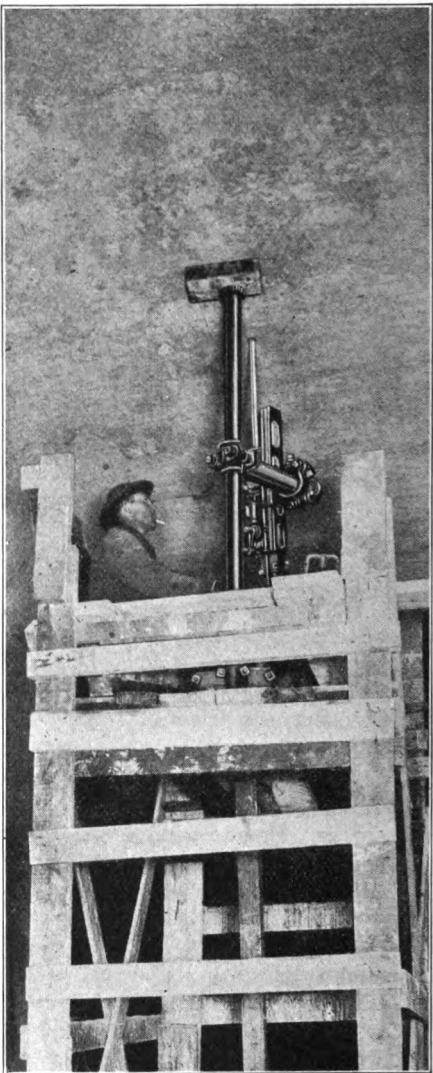
Send 25 cents and have your name put on our
subscription list.

**PRIZE OFFER TO SHIPBUILDING
RIVETERS.**

The Chicago Pneumatic Tool Company offers a prize of One Hundred Dollars for each new individual record established either in this country or abroad for shipyard riveting on hulls only. The test period is to consist of two hundred consecutive working hours. Boyer Hammers must be used and superintendents must certify as to accuracy of records. The purpose of the offer is to assist the Government in its policy of intensive ship production, while promoting friendly rivalry among riveters and demonstrating the unequalled merits of the Boyer Riveting Hammer. Public announcement will be made of the winners.

**An Unusual Application of the Hummer
Drill.**

In the construction of the Dorchester Tunnel, between Broadway Station and Andrew Square, the Boston Elevated Railway Co. found the Hummer Hammer Drill very effective for drilling 6-in. by $\frac{5}{8}$ -in. holes in the concrete roof of the tunnel. The holes are necessary for anchoring the trolley wire blocks. They must be drilled in sets of four and as there is no give in the trolley blocks,



which are of maple wood, the holes must be drilled to gauge.

The operator was able to easily drill a hole in three or four minutes. Some difficulty was experienced by striking iron reinforcement rods which were embedded about $2\frac{1}{2}$ inches deep in the roof of the tunnel and which were struck frequently. However, it was easy to shift the machine by just undoing the two bolts on slide arm and moving 1 inch away from the old hole.

The Transportation of Motor Trucks

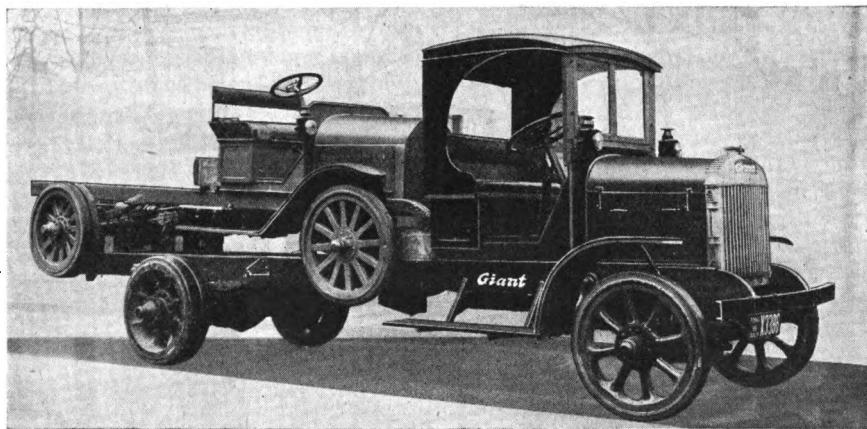
A Study in Evolution



The approved method of shipping Giant Trucks before war conditions tied up the railroads.



Meeting the congested Railroad Situation. A Giant Truck leaving the factory under its own power. Deep snow no obstacle.



No power wasted. A 3 1/2-ton Giant Truck enroute with a 2-ton Giant on its back. The last word in Motor Truck transportation.

LUBRICATION OF AIR COMPRESSORS

By W. H. CALLAN, Vice-President in Charge of Plants
Chicago Pneumatic Tool Co.

The lubrication of the compressor, steam cylinder, main bearings, crankpin, crosshead pin, crosshead guide, etc., does not differ from that of the ordinary steam engine, which is very well known and understood; hence the discussion in this article will be confined to the air cylinder lubrication only.

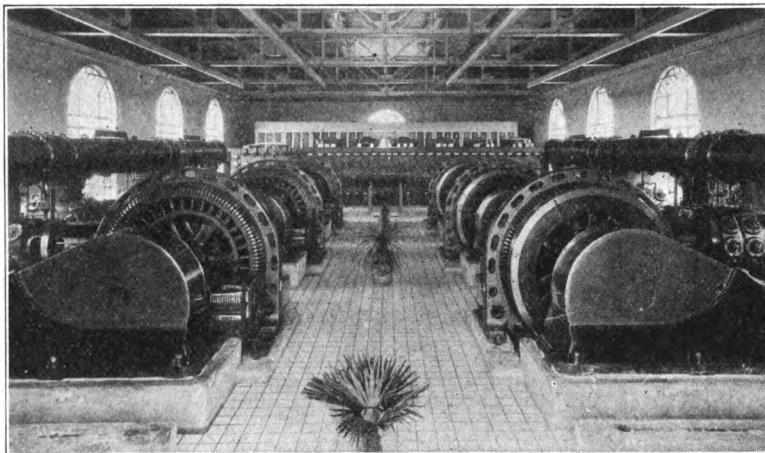
A number of years ago when we were young in the compressor business, considerable trouble was experienced in procuring a suitable oil for lubricating the air cylinders of our compressors. After considering the matter for some time, it was decided that an expert on the subject should be consulted. Following this decision, the matter was taken up with a well known oil company whose representative called upon us and, after making a careful examination of the conditions, reported that our trouble was entirely due to using an oil of too light body and too low viscosity to withstand the high heat of the compression. He stated that the oil we were using was gasified, due to the high temperature of the air, and that it passed off in vapor, leaving the cylinder wall without lubrication. The expert thereupon recommended an oil which he considered suitable for our use. The particular grade happened to be of 26 Beaume gravity with a flash point of 515 degree F., fire test of 555 degrees F., and a viscosity of 130 S at 212 degrees F.

After using this oil for some time we found no improvement in the operation of the machine, in fact it appeared to be laboring and the temperature of the discharge air was very high. After several days of operation with this new oil, the cylinder heads were removed, the valves taken out, and a careful examination made. The cylinder wall seemed to have a sticky, plastic coating; the air passages and discharge cavity of the cylinder

showed signs of dark deposits, while the face of the valve seats were covered with a black hard coating. This hard formation on one side of the valve seat caused the valves to leak, hence the increased temperature of the discharge air. The sticky coating on the wall of the cylinder was responsible for the increased friction. The representative's attention was called to this condition, whereupon he suggested that a little lighter oil be used, and this time he recommended one with 27½ Beaume gravity, flash point 450 degrees F., burning point 500 degrees F., and a viscosity of about 125 S at 212 degrees F. We asked him if he did not think this was a little too heavy a grade for air cylinder lubrication. He assured us it was not and stated that, in order to withstand the high temperature of the compressed air, it was necessary to have a rather low gravity and high viscosity oil, with a flash point above the temperature of the air.

After we had used this grade of oil for some weeks, a further examination was made; and while the cylinder wall appeared considerably better, the valve passages and discharge cavities of the cylinder were badly coated with a hard deposit. When this matter was again brought to the attention of the expert, he suggested that we reduce the amount fed into the cylinder. This was done with great care until we were only using three (3) drops a minute in a 14x14 cylinder running at 150 R. P. M., but even under this condition the deposits in the valve passages and the discharge cavities of the cylinder continued to form as long as we used this oil.

The expert happened to come our way several months after, whereupon I called his attention to the condition experienced with his oil. In regard to the amount



An Ideal Compressed Air Installation.

Six "Chicago Pneumatic" Class O-CE Air Compressors, size 26-15x18, displacement capacity each 2212 cu. ft. per minute installed by the Union Iron Works, Alameda, Cal. They are driven by 390 H. P. General Electric type A. T. I. synchronous motors, wired for 3 phase, 60 cycle, 440 volts.

First order covered two. This plant was soon extended to embrace the ma-

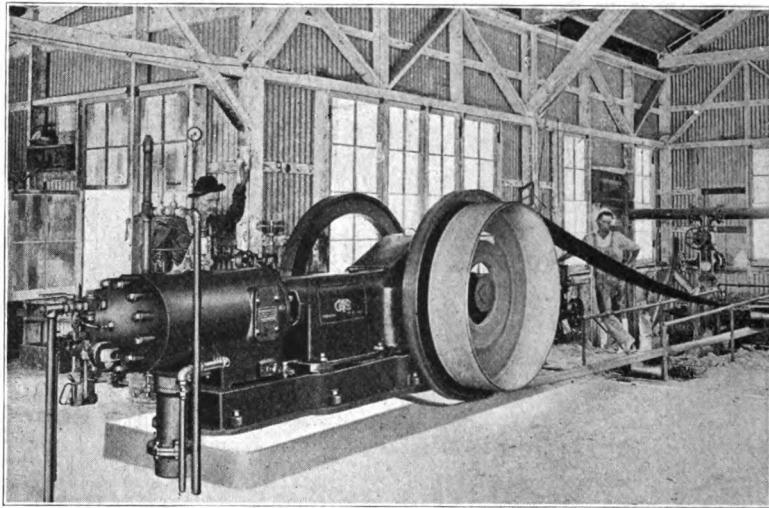
chines shown and space provided for two more now being erected, the Government shipbuilding program necessitating the maximum productive capacity of this yard.

Sixteen additional units have been ordered and are now being rushed to completion at our works. This endorsement of the superior qualities of our compressors may be safely accepted by those contemplating the use of compressed air.

we were feeding into this cylinder, he said this was reduced to a point that he thought was the minimum. His reason given for the formation in the passages was that the residuum of all oils is carbon, and that it, therefore, was no doubt due to carbon deposits. At the same time he assured us that the oil he had recommended was the best procurable for the purpose, and that we should go ahead and use it without any fear of trouble, which we continued to do. However, the formation in the discharge passages seemed to be building up very rapidly despite the fact that we were feeding but a very small quantity of oil into the cylinder. These formations had collected to such an extent that it was necessary to clean the passages in order to avoid the hazard of an explosion. The passages were, therefore, cleaned, and some

of this removed material was analyzed and found to contain about 1.5% free oil, 11% rust, 5% decomposed oil, 30% mineral ash, 10% coal dust, and the remainder foreign matter or residuum. A further investigation revealed the fact that our intake was exposed to such material as coal dust, mineral ash, shavings, water, etc., as well as some air.

After cleaning the compressor, and safeguarding the intake against dirt and dust, we procured another grade of oil which, in our own judgment, was more suitable for the work, since, in the meantime, we had made investigations and studied the question to some extent. This time we procured an oil of 31 Beaume gravity, flash point 375 degrees F., burning point 420 degrees F. and with a viscosity of 200 S at 100 degrees F. We started by feeding three drops a



City Dependent Upon Giant Oil Engine.

"Giant A-O Semi-Diesel Fuel Oil Engine driving a 1000 gallon per minute two stage centrifugal pump, pumping against a 125 ft. head into a tank.

The City of Imperial is located in the heart of the famous Imperial Valley about 100 ft. below sea level and its population is approximately 2500. Their main industry is farming, its principal products being cotton, cantelopes and alfalfa. The temperature in the summer

time is anywhere from 100 degrees in the shade up. This plant is the only source of water supply for the city, consequently they were compelled to secure an engine that would prove absolutely reliable and chose the Giant Semi-Diesel Fuel Oil Engine.

It is their intention later on to install another 14x14 A-O Engine to drive a generator to furnish lights for street lighting and other purposes and the space is already provided."

minute. Finding the cylinder copiously oiled, we reduced the feed to two drops a minute. The compressor was operated in this condition for a considerable length of time with practically no trouble from carbon deposits.

Experiencing such good results from this light oil and by this time disbelieving so much the virtue claimed for low gravity, high flash point and heavy viscosity, we were prompted to try another grade of oil, selecting this time one having a gravity of 33 Beaume, flash point of 380 degrees F., fire test of 420 degrees F., with a viscosity of 140 S at 100 degrees F. We used the same quantity as before, namely, two drops a minute in a 14x14 cylinder running 150 R. P. M. This oil was used for years without any

trouble from a point of lubrication, valve leakage and carbon deposits.

The oil representative made his regular calls on us and each time we told him what we were doing, but he assured us we were on the wrong track and that sooner or later would get into trouble. But after continued tests and very careful observation of all conditions, we are satisfied that the latter oil is the most suitable for air cylinder lubrication when working against 100 lbs. pressure, either Single or Two Stage.

One day an old friend of mine called, who also happened to be an expert representing one of the leading oil companies. I related to him my experience with air cylinder lubrication, and, somewhat to my surprise, he too assured me

that we were using the wrong oil and said, "You know you get not less than 400 degrees F. in your air cylinder when working against 100-lb. single stage." With this I agreed, I then asked him how he knew we were wrong, and what means he employed for ascertaining the proper grade of oil for air cylinder lubrication. He then proceeded to explain to us the method their engineers use in determining the proper oil for different kinds of service. He said, "Since you have agreed that the temperature of the air is 400 degrees, our test would be conducted as follows:—Take a block of cast iron 6-in. or 8 in. square and 2-in. thick, place this block in a layer of sand in a shallow iron pan, pack the sand closely around the cast iron block, then put a gas burner under the pan and turn on the heat slowly. The top surface of this block is polished and has a drilled hole, and into the hole a thermometer is inserted. Heavy steam cylinder oil is poured into the hole around the thermometer bulb so as to make a close heat contact. When the thermometer rises to 400 degrees, lower your gas burner until the thermometer remains steady at 400 degrees. Then take your different samples, dip the point of a lead pencil into the oil, hold the pencil 2 in. from the surface of this iron block and allow a drop to fall on the hot polished surface."

"When such a test is made with the grade of oil from which you say you are getting successful results, we find the drop spread out to about 1 1-8 in. in diameter, smokes a little, dries up, and is evaporated in ten seconds time, leaving the surface perfectly dry. With a higher grade of oil having a flash point of 450 degrees F. and heavy viscosity, when the drop falls on the surface of this polished block, it spreads out to about 1 1/4-in. in diameter, smokes a little, but after five minutes, the surface is still oily. Thus we have proof that this is the proper oil to withstand such service as you get in your air compressor cylinder."

Then I asked him what he thought the temperature of the surface of the

cylinder wall was when the air in the cylinder is 400 degrees F. He hesitated a little, then he said he believed it would be about 25 degrees F. less than the temperature of the air. I disagreed with him here, saying this did not seem right, as the water-jacketed wall should be much cooler than the air. After some discussion we went into the office and consulted some authorities on the subject; we found some tests had been made abroad on the temperature of the cylinder walls in an internal combustion engine, where, with an explosion temperature of 2700 degrees F. and an average temperature through the cycle of 950 degrees F., and the water in the jacket at 200 degrees F., the inside surface of the cylinder wall did not go above 267 degrees F. When my friend was shown these figures he was nearly speechless and admitted that he had never thought that the temperature of the wall of an internal combustion engine cylinder, with an explosion temperature so high, could remain as cool as this authority stated. However, since the character of the authority was such that it could not be disputed, it was accepted by the oil expert without question. I then asked what he thought the temperature of the air cylinder wall should be when the air does not exceed 400 degrees F. In answer he said he did not know, but did not believe it would be very much above the temperature of the water in the jacket.

As a matter of fact, the temperature of the inside of the cylinder wall of a water-jacketed cylinder is not more than 30 degrees F. higher than the temperature of the jacket water, as long as the water does not boil; and, since this is the true condition, what is the use in using oils of low gravity, high fire test, and high viscosity to meet a condition such as this one now appears to be? The temperature of the inside surface of the cylinder wall on an air compressor is very little, if any, above the temperature of the surface in the main bearing of the ordinary Corliss Engine.

From this it appears that the ordinary

oil expert who lays such stress on high viscosity and high flash point, has not considered the true conditions. We have further shown in this article that the cause of carbon deposits in the passages of an air cylinder is not always entirely chargeable to the residuum of oil, but in many instances is due to using an oil of too heavy a body, which adheres to the passages of the cylinder; and, furthermore, when the inlet is not properly protected from foreign matter, all such material as coal dust, mineral ash, shavings, waste, etc., are drawn into the cylinder and deposited on the sticky surfaces coated with this heavy oil. This foreign matter, with additional oil, gradually builds up until the passages become choked; the air valves begin to leak for some reason, thus increasing the temperature, until finally it sometimes reaches a point as high as 500 degrees F. when compressing to 100-lb. single stage. If there are many shavings or very much coal dust deposited in the passages, it is apt to char and become incandescent. When it does, the temperature of the air rises very rapidly, and as a consequence, the pressure increases quickly to a point beyond the strength of the receiver, and results in what is generally called an explosion.

It is the writer's opinion that no violent explosion ever takes place in the ordinary air compressor, unless kerosene, gasoline, or some such material is introduced into the compression space.

In our personal experience some years ago with a two-stage compressor where the intake had been neglected and also the wrong grade and quantity of oil had been used, the high pressure discharge valves became leaky, thus allowing the air to churn in and out of the cylinder at each stroke, heating it until it became so hot that the heavy deposits in the passages actually took fire; the whole system burned out, like a chimney of an old time wood stove. Very fortunately, however, for us, there was no explosion because the safety valve on the receiver relieved the sudden pressure caused by the burning material in the discharge

passages and the compressor was promptly shut down.

From the foregoing it will be understood that in the selection of an oil for air cylinder lubrication, nothing should be used but a pure mineral product having a gravity of from 31 to 33 Beaume, a flash point of 375 to 390 degrees F. and a viscosity of 140 to 150 S. at 100 degrees F. Under no circumstances should a heavy grade be used, despite whatever claims may be made by the oil salesmen as to the virtue of heavy viscosities or high flash points. It should also be borne in mind that when the surface of the cylinder wall is once glazed over, very little oil is required to properly and adequately lubricate the working surfaces.

The film of oil on the cylinder wall is understood to be less than .00025 in. in thickness, and since in the operation of compressing air, there is practically no moisture, the piston rides back and forth on this film and requires very little oil to be added in order to maintain the quantity required. Should a greater amount of oil be used than just enough to keep up the required film, it will be plowed up ahead of the piston and be forced through the valves and into the cylinder cavities, where it will collect in the low places and solidify by reason of being mixed with foreign matter taken in through the inlet, forming deposits commonly called carbon.

As has been shown, a 14x14 cylinder can be adequately lubricated with two drops of oil a minute when the compressor is operated at 150 R.P.M., being the equivalent of one drop of oil for each 800 square feet of cylinder surface swept by the piston. The oil herein referred to happened to be of paraffine base. However, we believe that an oil of about the same consistency, refined from an asphalt base, would serve as well, if not better.

Zero in Occupations.

Being head janitor in a girl graduate's air castle.



WAR WORKERS AND WAR SAVERS.

By Clarence L. Speed.

(Director of Publicity, War Savings Committee of Illinois.)

The National War Savings campaign entered the final quarter of the year with only half of the \$2,000,000,000 worth of War Savings Stamps issued for 1918 sold. The people of the Nation are called upon to make an earnest effort to invest as much money in War Savings Stamps during the last three months of the year as they did in the first nine—this despite the fact that the largest Liberty Loan drive ever made by the Government is to come in this period.

The theory of the War Savings Stamps is that it is not a competition of the Liberty Loan. All patriotic Americans are supposed to invest all the money they can spare from their accumulated savings and from the margin between income and ordinary living expenses in the Liberty Loan, then they are supposed to go further and invest in War Savings Stamps.

The money invested in War Savings Stamps should represent real self-denial. Every contemplated purchase of any article for individual use should be carefully thought over. The question each purchaser should ask himself is not "Do I need this" but "Can I do without it?" If he asks himself this question honestly and sincerely he will be amazed to find how many things he can do without. The money thus saved should be immediately invested in War Savings Stamps.

Thus, and thus only, will the Government receive the aid from every individual that it has a right to count upon in war time. It not only will get the money necessary to purchase materials and supplies for carrying on the war, but it will

be relieved from the competition for these same materials, supplies and labor which it now meets from private business. If our soldiers in France willingly offer even their lives for the winning of the war, we, who remain at home, should be able to deny ourselves a great many of the things we once thought necessary.

Organized saving is much more effective than individual saving. For this reason every factory, every office, every place where men and women earn their living, should be organized into a War Savings Society.

Here is a real opportunity for any individual, who has felt that he or she has not been doing everything possible to aid the Government in these war times, to perform a real service.

All he or she has to do is to organize the workers in his or her own department into war savers. It is a grand opportunity for volunteer service. There is no red tape about it. There need be no correspondence, unless it is desired, with any War Savings Committee. All the patriotic individual need do is to canvass his or her fellow-workers, get them to agree to purchase each pay day a certain number of War Savings or Thrift Stamps and then take the trouble to see that they fulfill their pledges.

If workers will pledge themselves to buy regularly after having fulfilled their other Government obligations, the necessary savings in material and labor will follow as a matter of course. They cannot spend for luxury or things which they can do without the money which they have paid in War Savings Stamps.

It is not necessary to dwell at length upon the advantages of War Savings Stamps as a matter of investment. It may be well to repeat, however, that workers who make this investment are not giving their money but are lending it at a good rate of interest. War Savings Stamps can always be cashed at full cost price plus interest. They cannot decline below par because the Government stands ready to redeem them at any time in case the holder finds it necessary to have his money.

In the last analysis, savings from incomes must be made by those who earned the incomes. Those who save the most now will not only be doing the most for their Government, but they will be in the best position to meet possible adversity in the days after the war has been won and the unsettled period of reconstruction has arrived.

Mistakes.

Mistakes do not "happen"—they are made, and their manufacture is an extremely unprofitable business. A sideline always found connected with it is the making of excuses. There is no market for either product.

If you run an excuse factory, sell it out and take up a business that pays. One-half the gray matter wasted on the excuse would prevent the error every time.

Don't doctor symptoms. Get after the cause of your mistakes.

Do you suffer from any of these diseases?

1. **Bunk-itis, or Chronic Gassing**—an affliction which causes its victim to expend thousands of good words trying to put something over, only to get a couple of bad words for his pains. Use your bunk exclusively for sleeping purposes—and don't talk in your sleep.

2. **Mental Myopia**—a near-sighted inability to see beyond the immediate act into all its important consequences; a kind of "see"—sickness that often compels a man to throw up his job. Extend your brains and use them as a telescope.

3. **Mental Astigmatism**—"seeing things crooked." Straighten out your theories; you are wasting time trying to bend your facts.

4. **Enlargement of the Ego**—a disease characterized by severe swelling of the "I." You may be willing to stake everything on your own judgment, ignoring the opinions of others, but perhaps the Company is not.

5. **Laborphobia**—a fear of work, otherwise described as "that tired feeling." This condition is often blamed upon hook-worm. That seems reasonable enough. If you are that sort of a worm you certainly won't have to wait long for the hook.

6. **Boobitis, or Paralysis of the Gumption**. Move out of the state of bewilderment into the state of Missouri. Then the next time somebody tries to slip one over on you, tell him where you're from.

7. **Sleeping Sickness**. Don't complain

if somebody wrecks your train of reasoning while you are slumbering at the switch. You expect your job to take care of you. Why shouldn't you reciprocate?

8. **Atrophy of the Intellect**—a wasting away of gray matter caused by jumping at conclusions instead of giving the brains a little much-needed exercise. The power of reason differentiates men from beasts. Be human.

9. **Rheumatic Recollection**. Don't blame your memory for going lame if you abuse it. Company memorandum books are free. They cure that complaint.

10. **Softening of the Spine**. If you believe you are right and the other man insists you are wrong, make him prove it. You don't need to be bullheaded about it, but never let anyone bluster you out of your backbone.

11. **"Yellow" or "Buck" Fever**.—An illusion that leads the victim to imagine he can sidestep his responsibility by passing the buck to somebody else. Don't try to shift your job onto the other fellow. If you'd rather not handle it the Company prefers to pick out a man for the work itself.—Anonymous.

Passing the Buck.

The Colonel calls the Major,
When he wants something done,
And the Major calls the Captain
And starts him on the run.

The Captain then gets busy,
And strives to make it suit,
By shifting all the baggage
On a shavetail Second Lieut.

The said Lieutenant ponders,
And strokes his smoothy jaw,
Then calls a trusty Sergeant—
To him lays down the law.

The Sergeant calls the Corporal,
Explains how it must be,
Then the Corporal calls a Private,
And that poor Private's me!

—Judge.

The Chicago Pneumatic Tool Co.

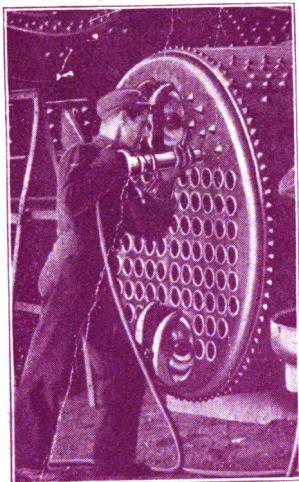
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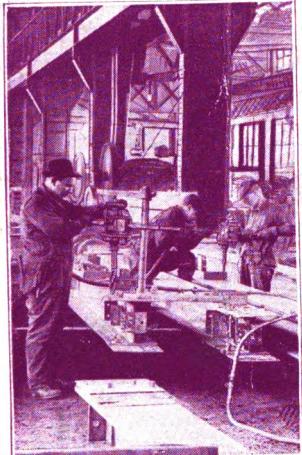
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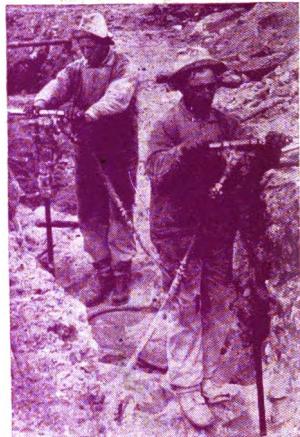
Little Giant Air Drill
at work.

One man with the aid of an efficient pneumatic or electric tool can easily do the work of from two to four men, which means not only a saving in time and money but an increase in the Man Power of the nation by releasing men for other work.

Chicago Pneumatic
tools in vast variety
of styles and sizes
for riveting, chipping,
calking, drilling,
wood boring,
reaming, grinding
and other elemen-
tary processes of
manufacture are at
your service. Let
them multiply your
man power and
speed up your pro-
duction.

Let them help win
the war.

Send for Bulletins



Hummer Hammer Rock Drill
at work



Little Giant Electric Drill
at work

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